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DEMOGRAPHIC DEVELOPMENT IN ESTONIA TROUGH CENTURIES

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The finale of the 20th century seems rapid all over the world. The extent of the 1987-1988 political events in Estonia is comparable with the developmental changes of a couple of "normal" decades. Several other aspects of social life are also rapidly changing. Against the background full of dynamacy the inertness of the demographic development catches the eye. It is not that here a week, a month or a year serves for a time - unit but a remarkably longer time-interval: namely the generation.

As for the number and acuteness of the demographic problems the present situation in Estonia is considered rather colourful. The perception of several problems as well as the attitudes and probably the application of the possible ways of regulation depend on the moment's balance of social forces to a great extent. But in view of the causal interpretation of the demographic situation the political and ideological processes should be left aside and the regularities of the demographic development should have the focus.

The present short review of the Estonian demographic history should elucidate that the Estonian population may be characterized by all the general demographic tendencies having been occurred among the other nations as well. In most cases the modern demographic situation cannot be understood through the post-war processes only. The events having taken place back to 3-4-5- generations, partly even earlier, will have great importance now and even in future. Observing the present situation as the concrete moment of continuous demographic development some of the "strange" phenomena may seem normal. Or vice versa: some of the ordinary phenomena turn out to be strange. After all, to open up the demographic situation in the very moment one should need casting a glance from the past. Considering the future perspectives the knowledge about the longer historical period become even more necessary.

THE TRADITIONAL TYPE OF REPRODUCTION AND THE DEMOGRAPHIC TRANSITION OF ESTONIA

The first reliable demographic data are confined to the number of population. The earliest of them datas back to the beginning of the ancient fight for freedom, about to the year 1200. We are informed about the military potential of the Estonians by Henry of Latvia's chronicle. "Liber Census Daniae" has been also preserved telling about the existance of the cultivated soil of the size of 21 thousand plough-land. Such an arable land managed to feed 100-200 000 people depending on the mode of determining the yielding capacity and the annual average food portion per capita. P.Johansen /1925/, H.Moora /1961/, E.Tarvel /1970/, H.Palli /1973/ and some other historians have had a somewhat different approach towards deciding upon the number of population. As fishing, hunting and picking served as the additional sources of food for the people of that period the number reaching the maximum-point may be considered as more probable. The facts known about the fight for freedom also speak for the bigger number of the Estonian population. After defeating the Livonians and the Latvians the Order of Sword could not win the Estonians. After the ten-years fight they turned to Denmark asking for help. The troops led by King Voldemar II invaded the North of Estonia. At the same time the Swedes attacked Estonia from the West. Besides the later estimations of the number of the Estonian population bying on the additional information are higher than the earlier ones.

The number of population of 200 thousand for the period should be considered as rather great. Almost at the same period the number of the Swedish population is considered to have been 400 000. There were 200 000 Norwegians, 340-500 000 Danes, 120-170 000 Lithuanians and approximately twice fewer Finns than Estonians. Presumably the relatively great number of the Estonians and the high population density had been related to the crossing of the East-West trading routes in Estonia. That is the very fact

that later became fatal for the Estonians.

After Peter the Great had broken the window into Europe through the Estonian territory the number of the Estonians had been figured as big as 150 thousand (1712). During the 500 years the population number rather reduced than grew, particularly, if at least the two considerable foreign migration inflows and their gradual assimilation are taken into account for that period.

Undoubtedly, the number of the Estonian population did not remain stable during these 500 years. Tupically to the traditional reproduction the years of population growth were alternated with the periods of crises when the number of deaths exeeded the number of births. The main reasons for the population crises were famine, epidemics and wars. In Estonia the influence of wars must be especially underlined. The ancient fight for freedom is regarded as the first important period of population crisis. The second known crisis was the period after the Jüriöö uprising when Harjumaa (probably a major part of the Northern Estonia) had been desolated as being told in B.Hoeneke's chronicle. The historians have not found enough sources for giving numerical estimations. The next and one of the severest population crises accompanied the Livonian War. By the year 1550, before the war, there were 240-280 thousand people living in Estonia. Only 70-100 thousand people were left in 1620-1625. The number of the population restored quickly and reached the number of about 350-400 thousand people by the end of the 17th century. The Great Famine, the Northern War and the last over-Estonian plaque again reduced the number of population to 150 thousand in 1712.

That period of time the pulsating population dynamics of the kind had been characteristic of all the countries. But in Europe the number of population as a whole grew 1,5-2 times during the period. This refers to the fact that by the frequency of the years of crises the Estonian territory had been in worse condition than average. Starting from the 13th

century the geographical location between East and West had been the cause for the zero population increase, while the slow growth occurred to be possible elswhere. Some neighbouring nations where even in worse condition: the number of the Livonians, Prussians, probably Votians and Vepsians had remarkably reduced.

The population reproduction in Estonian within the framework of the traditional pattern has been most thoroughly studied by H.Palli. He is the author of the survey monograph on the whole of Estonia /Паллн,1980/ and two monographic studies on the parishes - Rõuge and Otepää /Palli, 1973, 1983/. Like the other corresponding studies the mentioned ones leave no doubt that the population reproduction in Estonia was analoguous with other countries. The fertility was rather high: to 4-5 children by completed fertility rate. In normal years ca 2,5-3 of the children reached the full age. This number had been considerably smaller during the years of crises. The mean length of life at birth fluctuated between of 25 to 35 years. Because of the rather frequent years of local crises when primarily mortality of children and elderly had been influenced, the usual high share of those in reproductive age became even more prominent. Therefore the generations alternated intensively and the population recovered from the losses of the years of crises rather quickly.

Already at the beginning of the 18th century the first symptoms referring to the start of the disappearance of the traditional reproduction emerged in Estonia. The spread of the European type of marriage is considered to be one of them. J.Hajnal defined it as (1) later marriage and (2) remaining unmarried for the whole lifetime of a great share of women /Hajnal, 1965/. The European type of marriage is being quantatively characterized by the average age at marriage being over 23 years in case of women unmarried and the share of the married women making less than 55% (over 15 years of age) in the female population.

In this above mentioned article J.Hajnal delimeted the spread of the European type of marriage westward from the Leningrad-Triest line. The data presented by H.Palli enable to fix the timing of this process in Estonia. In Otepää parish the female average age at first marriage were as follows: 1725-1749: 21,5 years, 1750-1774: 22,8 years, 1775-1799: 24,2 years /Palli, 1988, p.877/. In 1765 the share of the married women was 55,8% in the full age population of the Otepää parish /Palli, 1988, p.112/. Hence the European type of marriage was going to take shape by the end of the 18th century. Estonia lied on the eastern border of the area of distribution of that new phenomenon.

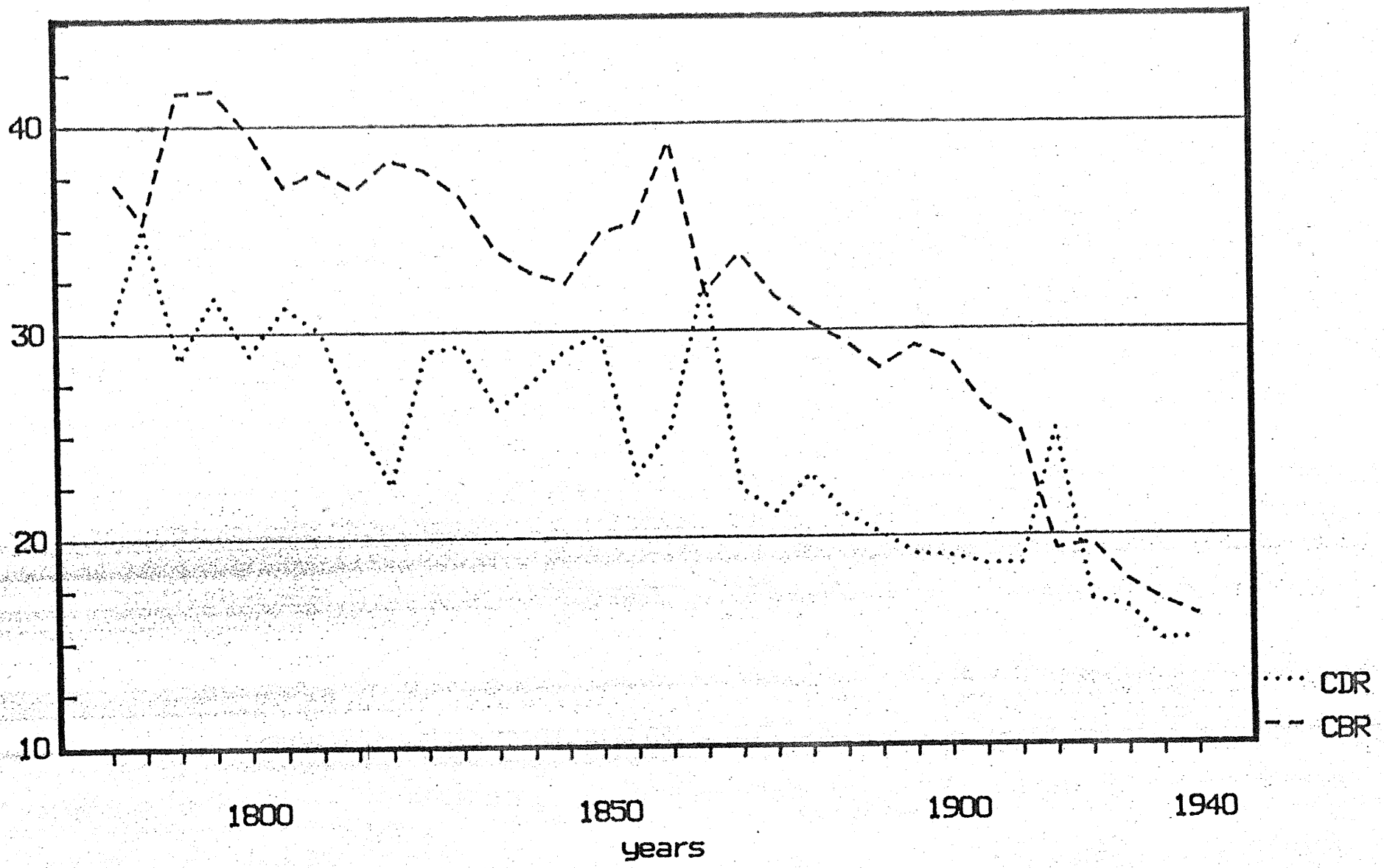
The European type of marriage was one of the heralds of declearing the beginning of the decay of the traditional population reproduction that had been lasted for thousands of years. The spread of the European type of marriage made the clear distinetion in demographic development between Estonia and its closest eastern neighbour as well as the majority of the East-European countries. Having been politically turned to a Eastern outpost in the West (Estonia was conquered by Peter the Great in 1710) it became the Western outpost in the East in sense of the demographic development. Being reflected already ca 200 years ago the demographic development has not been synchronous with Russia, it remained a factor of great importance in the formation of the demographic situation in the present day Estonia. This non-synchronity is also the key to understanding the future development.

The changes in the East-West trading routes and annexing Estonia to the Russian Empire were the factors that avoided direct warfare on the Estonian territory for the period of 200 years. Hence, the main factor having caused the population crises disappeared. Likewise the other factors - epidemics and famine-gradually lost their importance as in most of the advanced European countries. Mortality remained on the "normal" level typical to the traditional reproduction for the prolonged period. Caused by

the spread of the Eurpean type of marriage fertility decreased but rather slowly at the beginning. Thus the pre-transitional population growth became possible. In Estonia the number of population ca 150 000 after the Northern War increased up to 730 000 by the year 1850 /Катус, 1982, c.103/. The almost 5-times growth of the population (with the help of immigration to be more (exact) in less than 150 years had not been smaller than in other countries during the same period. Compared to neighbours the growth was even bigger. Nevertheless, compared to the neighbours of the Baltic basin the Estonians remained the little nation for the "pre-start" small number of population. In the middle of the 19th century there were 1 657 600 (1851) people living in Finland, 3 500 000 (1850) in Sweden, 1 265 000 (1863) in Latvia and 1 608 000 (1860) in Denmark /Население, 1986, c.17; Демографическая ..., 1985 c.107, 506, 528/.

In the middle of the last century the changes known as demographic transition begin to take place in the Estonian demographic development. Until now this process has been understudied, especially the starting period. I tried to generalize the available information in my dissertation /Катус, 1982/ and came to the conclusion that the critical turn in the demographic development took the beginning between the years 1850-1870, conventionally in 1850. The crude rates of fertility and mortality for that period demonstrate continuous decline (with only the short-period fluctuations) as seen on Figure 1. The final phase of the demographic transition is already well-provided with the data. Let the other general fertility data be accompanied by the Coale's indices, the specific indicators elaborated by the Princeton team, for fixing the fertility at the end of the demographic transition (Table 1). By the 30 of the present century fertility had been declined under the replacement level principally as a result of regulating the marital fertility. The mortality criteria for marking the finish of the demographic transition are sort of indistinct.

Figur 1 DYNAMICS OF CRUDE BIRTH AND DEATH RATES, 1782-1940



According to the 1932-1934 life table the average lifespan in Estonia had been 56,4 years, 53,1 for men and 59,6 for women. The highest indicators for that period in Europe were in Holland (62,7 years) and Norway (62,4 years). Estonia had been laid down by these countries as by some others for the high infant mortality: this indicator showed 85,1% still in 1935-1939. Among the causes of mortality the endogeneous ones take the firm leading position /Rahvastikuprobleeme, 1937, p.148/.

Table 1

FERTILITY INDEXES OF ESTONIAN POPULATION, CENSUS YEARS

	1922/23	1933/34
Total fertility rate	2.48	1.88
Births per 1000 women in age 15-49:		
whole	69.4	61.0
married	127.5	110.2
unmarried	8.8	12.0
Coale indexes:		
overall fertility (If)	0.192	0.153
marital fertility (Iw)	0.404	0.289
illigitimate fertility (Ih)	0.025	0.030
marital behaviour (Im)	0.440	0.476

The demographic transition is considered to have ceased before WW II. Giving this shift of demographic development the temporal dimensions we may regard the years 1850-1940. At this very spot I should emphasize the need for a thorough study of the demographic transition in Estonia. H.Palli /Палли, 1988/ takes the same standpoint. Although, realizing the Princton programme is in our mind. No doubt, the the present situation would be better understood if this work have been done already. The demographic transition brings about the new and historically unique factor reflected in the dynamics of the population number. For the average lifespan has grown twice, all the born ones live longer, the rapid alternation of generation which has been characteristic of the traditional reproduction is being substituted by the coexistance of generations. In case the fertility

decline is lagging behind of the mortality decline during the demographic transition, the growth of population of the period is going to be especially rapid. This phenomenon is called the demographic explosion.

The distinction is made between three types of the demographic transition. We are interested in two European types. The French type is characterized by the almost simultaneous decline of fertility and mortality and the modest demographic explosion. As for the English type fertility remains at the previous high level during the 10-20 years or even longer after the beginning of the declining mortality. In that case the population growth is remarkably greater. According to Z.Pavlik and M.Hampel the population has grown 4,9 times in England, 4,3 times in Denmark, 5,7 in Holland, 2,8 in Germany, 3,0 in Sweden, 1,8 in France etc. during the demographic transition /Pavlik, Hampel, 1975/.

Describing the demographic transition in Estonia from the viewpoint of contemperary problems we should primarily touch upon the two aspects. (1) The transition followed the French type. Mortality and fertility made practically simultaneous decline. Therefore the population increas in Estonia increas was only about 1,6 times then /Катус, 1982/. If we make use of the Z.Pavlik's territory-centred method which takes into account the growth for a certain territory without considering out-migration, the growth of the number of population would be only 40%. (It must be pointed out that Z.Pavlik had presumably determined the starting-period of the demographic transition in a sort of different ways.) Paradoxical in a sense but the cause for the today's small number of the Estonians should first of all be found from its most rapid growth period - the demographic explosion. Then the growth of the Estonian population had been many times smaller than at the most other nations.

(2) The beginning of the demographic transition in Estonia was one of the earliest if not the very earliest in the Eastern Europe. Lagging

slightly behind Sweden /The Biography ..., 1974/ Estonia together with the Northern Latvia (Latvia without Latgalia) was ahead of their neighbours. In view of estimating the modern situation the difference with Russia is more relevant. A.Visnevski and A.Volkov see the first signs of the beginning of the transition in the Tsarist Russia and regard as the real beginning only the period that succeeded the 1917 social revolution. Together with the co-authors they come to the conclusion that the Russian demographic transition ceased at the beginning of the 60 in its most important aspects /Воспроизводство..., 1983/. So, the changes that appeared in the Estonian demographic development already in the 18th century evoke the beginning of the demographic transition about a half of the century earlier compared to Russia. The difference of 20 years had been preserved in the end of that period. I return to the meaning of that non-synchronic development later.

One of the first scientists to define the hypothesis of the theory of mobility transition was W.Zelinski /1971/. According to that theory the demographic transition proceedes simultaneously with the growth of the population mobility, especially at the phase of the remarkable fertility decline when the dependency between generations was weakening. On the other hand the mobility is being supported by the rapid growth of the population: not all the people are able to get a job in the rural areas - ca 80-90% of the population lives there before the start of the demographic transition. There exist principally two directions of the migration flows: the urban settlements of the very territory and emigration into other countries.

Through the Middle Ages up to the forming modern settlement system. there were 12 towns in Estonia. The share of the urban population was 5-6% still in the first half of the 19th century /Паляи, 1977, с.228/, making a rise up to 19,2% in 1897 and 32,8% in 1939. By the two or three last decades of the previous century and at the beginning of the present century the network of urban settlements has been formed up in Estonia which have been preserved this way (excl. Ida-Virumaa) up to now. The growth of the

old towns and emergence of the new ones had been confirmed by the migration flow from the rural areas. It still seems that the Estonian town lacked the sufficient developmental potential for to receive the whole potential migration from its hinterland. Obviously the foreign (german-russian) life-style as well as the general economic underadvancement had certain roles in the development of cities.

In any case a great share of the Estonian migration flow had been directed outside the ethnic boundaries. The flow had two directions. One of them was directed to the overseas as it was a rule in Europe. That emigration from Estonia did not obtain the organized form and included mostly the coast inhabitants excluding the peasants. R.Taagepera has considered that the number of the Estonian emigrants to the overseas before WW I should have been around a couple of thousands /Taagepera, 1989, lk.60/. This is understandingly rather an approximate and obviously reduced estimation. The major part of the Estonian migrants directed to the Russian inland. In several regions the conditions for getting the land were practically similar to those in the New World but the access with the houshold belongings was simpler compared to the voyage. The colonization of Russia had the organized form in Estonia. At the end of the previous century the Estonian settlements sprang up in the Far-East of Russia, Siberia, Abhasia, the Crimea, the lower reaches of the Volga River. The gratest colonization in numbers took place in the neighbouring areas: Pskoff, Vitebsk and particularly the province and the city of St. Petersborough /Nigol, 1918; Pullat, 1981; Вийме..., 1975/.

The emigration of the Estonians outside the ethnic boundaries has been demographically under studied. The number of emigrants is not known. 1897 census data permits to get evidence on the moment's location of the Estonians. Then 891 600 Estonians of the 1 102 738 Estonians of the Russian Empire lived within their ethnic boundries. That makes 110 000 Estonians

living outside. The year 1920 was another guiding-mark when the Soviet Russian census had been carried out. Relying on the census data V.Maamägi estimates the number of the Estonians to have been 180-185 000 people in the 1920 Russia. /Маамяги, 1976, с.47/.

Taking into consideration the military personnel who had already returned to Estonia and the beginning of opting according to the Peace Treaty of Tartu (February, 1920) the number of the Estonians outside the ethnic borders but within the Russian Empire is estimated to have been approximately 200 000. If we take into account also those who have emigrated to the other parts of the world then it is supposed that about 20% of the Estonians lived outside their homeland before WW I. Undoubtedly, this did not refer only to the out-migration, since the number of the Estonians in emigrance also increased naturally. On the other hand we have to consider the possible assimilation by that period.

Studying the Finnish out-migration R.Kero comes to the conclusion that 330 000 people emigrated from Finland up to WW I. He notes that Finland had one of the greatest out-migration among the European states /Kero, 1982, p.47/. But having the Finnish example as a background the out-migration from Estonia seems even bigger (the Finnish population was 3 million before WW I and only about 1,2 million in Estonia) claiming to take the first place in Europe. I Relatively large in numbers "Russian Estonians" had an important influence on the Estonian demographic situation during the period that followed WW II.

WAR AND THE SOCIAL REARRANGEMENTS

WW I and WW II and the social shifts that accompanied them influenced the Estonian demographic development not that much as factors modifying the developmental regularities but as factors changing the number of population and geopolitical situation.

The decrease of the number of population during WW I and War of

Independence is not exactly known because of data gaps before war. The dissertation by V.Kaufmann is dedicated to the problem. According to the author's estimates there were 1 157,8 thousand people living in the 9 Estonian districts in 1915 (boundaries of 1881 census) or about 1 282,2 thousand in boundaries of Republic of Estonia /Kaufmann, p.27/. The number of the Estonian population was 1059 thousand on January 1, 1920. /Rahvastik..., 1930, p.43/. Evidently there was a decrease of 223,2 thousand people. Unfortunately, this number comprises both the persons killed as well as the emigrants who left for different reasons.

Upon the V.Kaufmann's data I tried to figure out the number of "missing" Estonians. During the 1897 census there were 1 002 738 Estonians living in the Russian Empire. The comparative figure can be calculated for the end of 1922. For the reason of opting (according to the statistics of the Republic of Estonia 37 578 people were opting in 1920-1923ies) the number of the Estonians in Soviet Union had been decreasing to 153-158 000 by that time. There were 969 976 Estonians in Estonia itself. So the total number of the Estonians makes 1 125 000 under the rule of the former Russian Empire. It makes the increase of 120 000 people in 1897-1922. According to V.Kaufmann the natural increase was 147 600 people in the 9 Estonian districts in 1897-1915 including 134 000 Estonians.. By the beginning of WW I the nuaber of the Estonians is supposed to have been 1 157 000 if the Estonians living elsewhere in the Russian Empire had the same natural increase. The years 1916-1919 are characterized by the negative increase of 37 300 people and there was the positive increase of 7000 people in 1920-1922. Summing up these figures would give us the number of about 4-5 thousand Estonians killed in the war or leaving abroad. This cannot be true. Obviously the pre-war number of the Estonians and presumably the total number of the Estonian population needs some correction.

When the changing of the population number during WW I and War of

Independence principally needs correction, then the influence on the demographic development seems clearer. The declining trend of mortality is continuing immediately after the war. The same trend is observed on fertility. The mini-baby-boom of the 1921-1923s is almost unnoticable and fertility is declining under the replacement level by the end of the 1920s. Or, otherwise, the process of demographic transition was not principally influenced by the war. It could still be hypothesized that to a certain extent fertility decline had been accelerated by some of the extreme events.

Compared to WW I, WW II and the accompanying geopolitical changes caused greater shifts in the Estonian demorgaphic development. It happened already in 1939 when the Germans, the second national minority in Estonia, began to leave: from October 17, 1939 up to May 11, 1940 13 339 people left Estonia. /Райд, 1978/ By January 1, 1940 the Estonian population number was 1 121 939 and 1 117 310 by September 1, 1940 /Eesti NSV ... 1940, p.32/. According to the Third Estonian Census, December 1, 1941, the population number was 1 017 811. Consequently, if compered to the beginning of the year 1940 the decrease makes 104 120 people. During a year and the 3 months long Soviet period the decrease had been 99 500 people. This number comprises also the 10 157 deported people /Laasi,1988/. The reasons why the almost 10% of the Estonian population were carried away from their home were investigaled in the following 3 years and the data were published. The very recent review belongs to R.Taagepera /1989/. According to my estimations there could have been 32 500 potential returnes among them by the end of the war.

Upon the war-time statistics [illegible]mann suggests the number of the Estonian population to have been 994 300 by July 1, 1944 (before military activities in the Estonia territory) and 910 200 by the end of those activities (January 1, 1945.) Compered to September 1, 1940 the population

number had been decreased for 207 100 people or 18,5% and 107 600 people compared to the 1941 census data. /Kaufmann, 1967, lk.111-113/. But here we do not deal with the direct war losses. The last numberis smaller by the above mentioned 32 500 potential returners. In different ways about 70 000 Estonians found themselves abroad. Although not perished they were the "population perished" for Estonia. On the other hand a remarkable share of the Estonians were brought back to Estonia from the regions of Leningrad and Pskoff during the war and they were included into the number referred to above.

Although the war had ceased on the Estonian territory the social life was far from the normal state. The number of the people killed later in WW II (mobilization into the Red Army), liquidation of "bushwhackers", convicts etc. is rather vague for the present /Parming, 1972; Taagepera, 1989, / Another deportation took place. On March 25, 20 702 people were carried away /Laasi, 1989/.

It would be complicated to treat the human losses caused by WW II and the accompanying social changes briefly One of the possibilities to do this would be the comparison of the number of the Estonians before the war and in 1959 when the precise data became first available after the war. According to the census data 892 653 Estonians lived in Estonia and 95 963 elsewhere in the Soviet Union, making the total number of 988 616. During the 1939 census 143 589 Estonians were counted in the Soviet Union /Кознов, 1982, с.285/. There were 999 130 Estonians living in Estonia then, that makes 1 142 719 people as a whole. This means the difference of 154 103 people. The natural increase according to V.Kaufmann /1967, p.140-141/ was 80 000 in Estonia of the 1945-1959s. About 50 000 of them might have been the Estonians. At least by this number the population had been increased from the post-war period up to the census (No data is available on the natural increase of the Estonians elsewhere in the USSR). Hence the human losses of the war and turning events make 200 000 people, ie. 17,5% out of

the pre-war number of the Estonians.

The Estonians can never quatitatively recover from the loss of that extent. Differently from the other Soviet and East-European nations the Estonians (also the Latvians) were suffering from the catastrophe at the final phase of the demographic transition. Fertility had fallen under the replacement level and the population grew only due to the positive potential of the age-structure. Under the circumstances of the modern slow alternation of generations such a population decrease is incurable.

But the war also caused changes in the Estonian population of a totally different nature. For a short period of time Estonia turned to an almost pure national republic. According to the 1934 census there were 87,7% of the Estonians and three national minorities: 8,2% of the Russians, 1,7% of the Germans, 0,7% of the Swedes. Conformably to the Soviet-German agreement the Germans left (during the first Soviet Year practically all of them). According to the convention between Germany and Sweden the departure of the Swedes was mainly organized in 1944. The majority of the Russians was settled on the territory of mixed inhabitation of the Eastern frontier. These territories were united with the Russian SSFR in 1945. As a consequence, the Estonian territory was reduced by 1854 km2 and 56 200 people (according to V.Kaufmann estimation by the autumn 1945). 81% of them were not Estonians /Kaufmann, 1967, p.114,273/. Taking into account the described changes I figured out that by the end of the war the share of the Estonians was 97,3% on their new territory /Karyc, 1987, c.15/. Estonia had lost all of its native minority nations.

Becoming a Soviet republic Estonia was again united with the territories which stood at different levels of demographic development. But the roles have been changed in termes of migration potential. In the second half of the last century and at the beginning of the present the Russian Empire acted as the receiver of the Estonian colonizers, now the high

potential of migration was characteristic of the Soviet Union. Among the others Estonia also became the region for realizing that high potential. Although Estonia received a relatively small share of Soviet out-migration, it was catastrophically to much for the little Estonia. In this aspect the difference by two orders in numbers of populations became determinant.

THE POST WAR DEMOGRAPHIC DEVELOPMENT AND THE PROBLEMS OF TODAY

The demographic situation in Estonia became the centre of interest primarily as a result of the changes in the proportions between the native and migrant population. The old problems became more acute and the new contradictions emerged both in the demographic as well as in the social development. There is nothing to be suprised about when we study the extent and especially the speed of the proportional changes. Table 2 demonstrates the Estonian population dynamics according to the census years. Within the last years the share of the Estonians has decreased from 97,3% to 60,6%. Such an increase of the migrant population is known to non of the states perceiving acutly the problems caused by the immigrant-flows.

Table 2

NATIONAL COMPOSITION OF THE ESTONIAN POPULATION

	Total Population	Estonians	Non-Estonians	Share of the Estonians %
1945 (*)	854 000	831 000	23 000	97,3
1959	1 196 791	892 653	304 138	74,6
1970	1 356 079	925 157	430 922	68,2
1979	1 464 476	947 812	516 664	64,7
1988 (*)	1 570 600	851 800	618 800	60,6

(*) estimation

In Estonia the increasing of the migrant population has not always been of the similar nature inspite of the same objective basis during all the period, namely high migration potential in the slavic republics. That period had been passed in Estonia and after WW II it stood for a region of destination for the in-migration. In terms of the potential immigration

from the slavic republics into Estonia had been determined by the non-synchronous demographic transition. The change of the geopolitical situation released that potential. At the beginning it also comprised the administrative migration as the social rearrangements required administrators and ideologymen. The economic management became bureakratic and an urgent need for the personel up to the smallest sub-divisions emerged. The staffing of the personnel of all these kinds was organized. Estonia received also the military personnel, army officers fraquently came with families. Having reached the status of an economically relatively developed country during the pre-war period and possessing the more effective infra-structure Estonia turned to be economically advantageous region for making centralized capital investments. The wave of industralization (North-Eastern Estonia, Tallinn etc.) prepared ground for the migrant population to settle in Estonia which became easier due the depotation of the Estonians at the same time. The rapid decrease of the share of the Estonians during the first five after-war years was caused not only by the solid in-migration but the simultaneously organized forced out-migration of the native population.

As by the end of the 50s the importance of the administrative migration reduced and the survivors of the deportation returned migration between Estonia and the other regions of the USSR gradually acquired the nature that could be regarded natural between two regions with different migration potential. By and by in the 60s the migration potential began to fall also in the European regions of the Russian SSFR .

The decrease in the migration potential would have started the slow but continous decrease of the immigration flow into Estonia. Unfortunately the natural development had been violated for the second time. Namely the Estonian labour resources had been exhausted by the extensive economic development. At the same time the rapid growth of labour resources and the

extensive economic development were continously characteristic of the other Soviet regions for the more 15-20 years (for that very same non-synchronous demographic development). As the unitary centralized econimic management prevailed, neither could Estonia deviate from the usual type. In the second half of the 60s the economic mechanism favouring immigration into Estonia start to operate. The initiative originated from Estonia itself but it was disguised.

Such a policy of favouring migration was powerful for it's manyfold nature. It was carried out by individual enterprises for the economic reasons but not by the unitary bureaucratic administration. R.Noorkõiv with his collaborators has been studying the influence of such migration more profoundly /Noorkõiv, 1986/.

Table 3

AVERAGE ANNUAL MIGRATION FLOWS BETWEEN ESTONIA AND THE PSKOFF DISTRICT

Year	In-Migration	Relative Change %	Net-Migration	Relative Change %
1955-59	2028	100	+725	100
1960-64	2030	100	+1121	155
1965-69	1530	75	+669	92
1970-74	1249	62	+448	62
1975-79	987	49	+366	50
1980-84	709	35	+212	29
1985-87	563	28	+125	17

Naturally, the migration insentive policy was incapable of bringing up the decreasing migration potential of the Estonia's neighbouring regions. The in-migration flow was kept relatively high due to the considerable enlargement of the Estonia's migration hinterland, Figure 2 shows the enlargement in 70s.

At the same time the migration flows with the immediate neighbouring areas were rather quickly declining. Let the traditional migration hinterland - the Pskoff district serve as an example (Table 3). The more detailed information on the total Estonian migration could be found in the appendix.

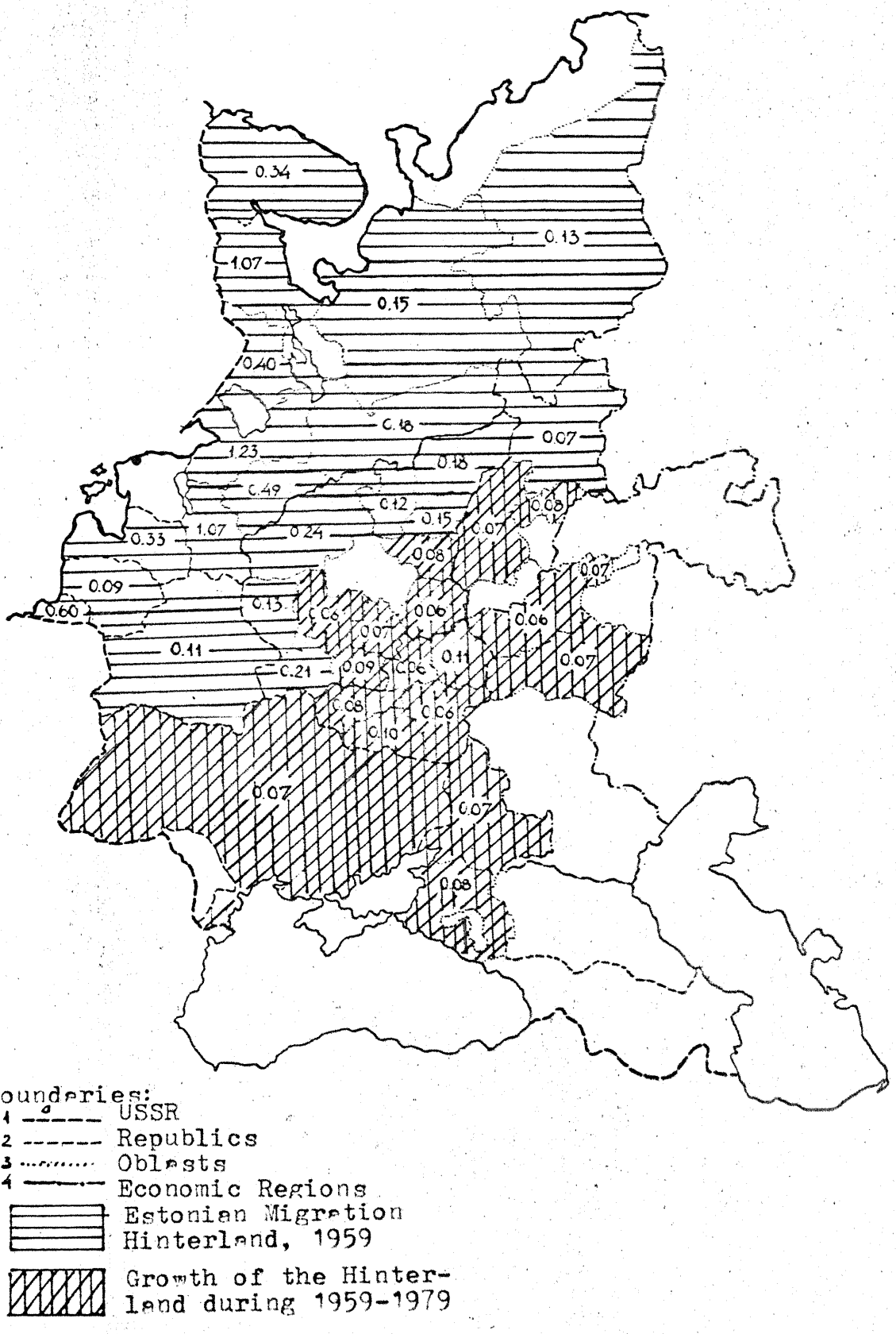


Figure 2. Estonian Migration Hinterland, 1959 & 1979. The Figures Denote the Hinterland's Crude Migration Rates to Estonia.

The enlargement of the Estonia's migration hinterland brought about the considerably smaller decline of in-migration and net-migration than it would have been without the migration insentive policy. Anyway the quantity is not all of the truoble. From the beginning of the 70s the qualitative changes of migration become more acute. At that we have to touch upon the two phenomena. (1) The explosive enlargement of migration hinterland brought into Estonia the increasingly differentiating migrant population. The growing share of the newcomers has no earlier contacts with Estonia and the present life-style seems strange and hostile to them. But the newcomers have also little in common with the earlier arrived migrants from the Estonia's neighbouring areas. Thus the migrant population gathering into Estonia forms up a very heterogeneous society with even greater internal differnces compared to the natives and between some of the groups of the migrant population. The decay of the general social, including the demographic unity of the Estonian population has made the social development more complicated in almost every aspect.

(2) The migration insentive policy was based upon the supply with the material wealth. This was primarily responded to by the part of the population with the reduced sense of home which means that they felt at home everywhere where better consuming contitions were available. Such a "highly-adaptive" population aspired for the social unification. Estonia ocurred to be the region concentrating the kind of the population from the whole of its hinterland /Karyc, 1989/. This is the part of the population causing the present chauvinist movement (for the unification of the Soviet Union) in all the Baltic states like elsewhere in the regions of high concentration of such people.

The uneven distribution of the migrant population in Estonia makes another question. Migration statistics does not registrate the place of birth. But the importance of the share of the migrant population could be indirectly estimated by the national origin (Figure 3/. They are mainly

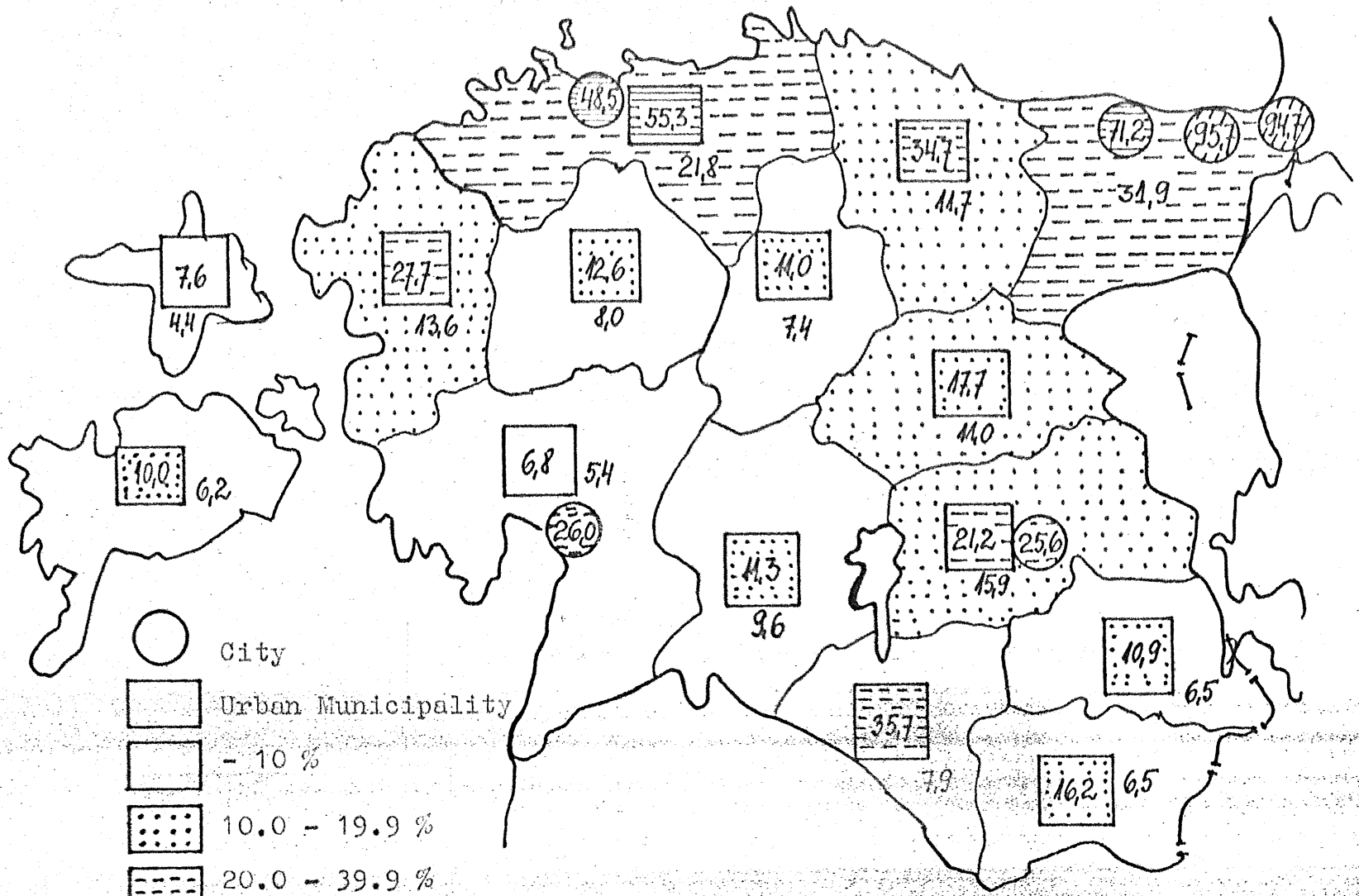


Figure 3. DISTRIBUTION OF NON ESTONIAN POPULATION BY URBAN AND DURAL REGIONS, PER CENT OF WHOLE POPULATION IN 1979

concentrated into cities (North-Eastern Estonia, Tallinn) and also to the military bases (Paldiski). It could be stated that the enlargement of the Estonia's migration hinterland had very uneven intra-regional effect. In some cities the two-waved urbanization was called forth. The Tallinn case of the process has been studied by K.Katus and L.Sakkeus /Катус, Саккеус, 1986/. T.Kümmel had demonstrated the destabilization of the Estonian settlement system and the fastening of the settlement hierarchy of the colonial nature /Kümmel, 1986/. The situation is especially complicated in the North-East of Estonia.

The enormous in-migration into Estonia differentiate the demographic behaviour of population. The two behaviour types formed up: the one typical to the Estonians and the other to the non-Estonians. Certainly, the differentiation was not that much caused by the national origin than by the differences in the time of proceeding the demographic transition with the corresponding general cultural backround. It must be underlined that the second generation of the migrant population managed to preserve the behaviour model typical to their home-region which had not been synchronous with the one in Estonia as referred earlier. The coexistence of the two behaviour types is the basis for the formation of the demographic situation in Estonia of today and tomorrow.

The two demographic behaviour types get the especially distinct reflection in fertility process. The Estonian's fertility dynamics is unique in Europe to a certain extent which motivates the more detailed treatment of this dempgraphic process.

The uniqueness of the Estonian's fertility is reflected by its high level. Above we considered the decline of fertility under the replacementlevel at the end of the 20s. It kept that level during 40 years fluctuating between 1.85-2.00 by the total fertility rate. But at the end of the 60s fertility rises in 3-4 years ca 20%, measured by TFR: from 1.90

in 1966/67 to 2.29 in 1970/71 (Figure 4). Fertility has remained high until now although with some fluctuations. In general, the Estonians' fertility has been about 15% higher in 1968-1988 compared to 1928-1968. The changes of the levels measured by period fertility rates are also reflected in cohort indices. Figure 5 presents the completed fertility rate in 1985 (the last cohorts on the Figure have not passed the reproductive age).

The non-Estonians did not followed the same pattern of fertility rise. They continued the declining trend of their home regions up to the end of the 70s. In the 80s the non-Estonians' fertility rises like in the slavic republics: reminding of the Estonians' fertility rise of the 60s. At the same time the Estonians fertility also made a slight rise which remained behind the non-Estonians (Figure 4).

The Estonians' fertility is high not only in dynamic comparison but primarily in comparison with the demographically advanced countries. Although Estonia's fertility trend followed the path of the European states with some positive or negative time lag up to the end of the demographic transition,the further development differentiated. In all the states with pre-war low fertility a remarkable rise took place after WW II, called as baby-boom. The fertility level kept high for a prolonged period. Only by the end of the 60s and the beginning of the 70s the decline is being observed becoming that significant by the 80s that J. van de Kaa /1987/ could write about the second demographic transition. The Estonians haven't had the post-war baby-boom and fertility remained below the replacement level. It is worth mentioning that the 1930-1934-born generation occuring in their most active reproductive age in the 50s is the Estonian generation with the lowest completed fertility rate (Figure 5). Later when fertility begins to decline in Europe, the Estonians experience a rapid rise. Figure 6 presents the TRF comparison of the Estonians and some other European nations in 1960-1964 and at present. It is highly probable that the present high fertility of the Estonians is connected with the low level of the

Figure 4 DYNAMICS OF TOTAL FERTILITY RATE, 1958-1987
[Katus, 1988, p.13]

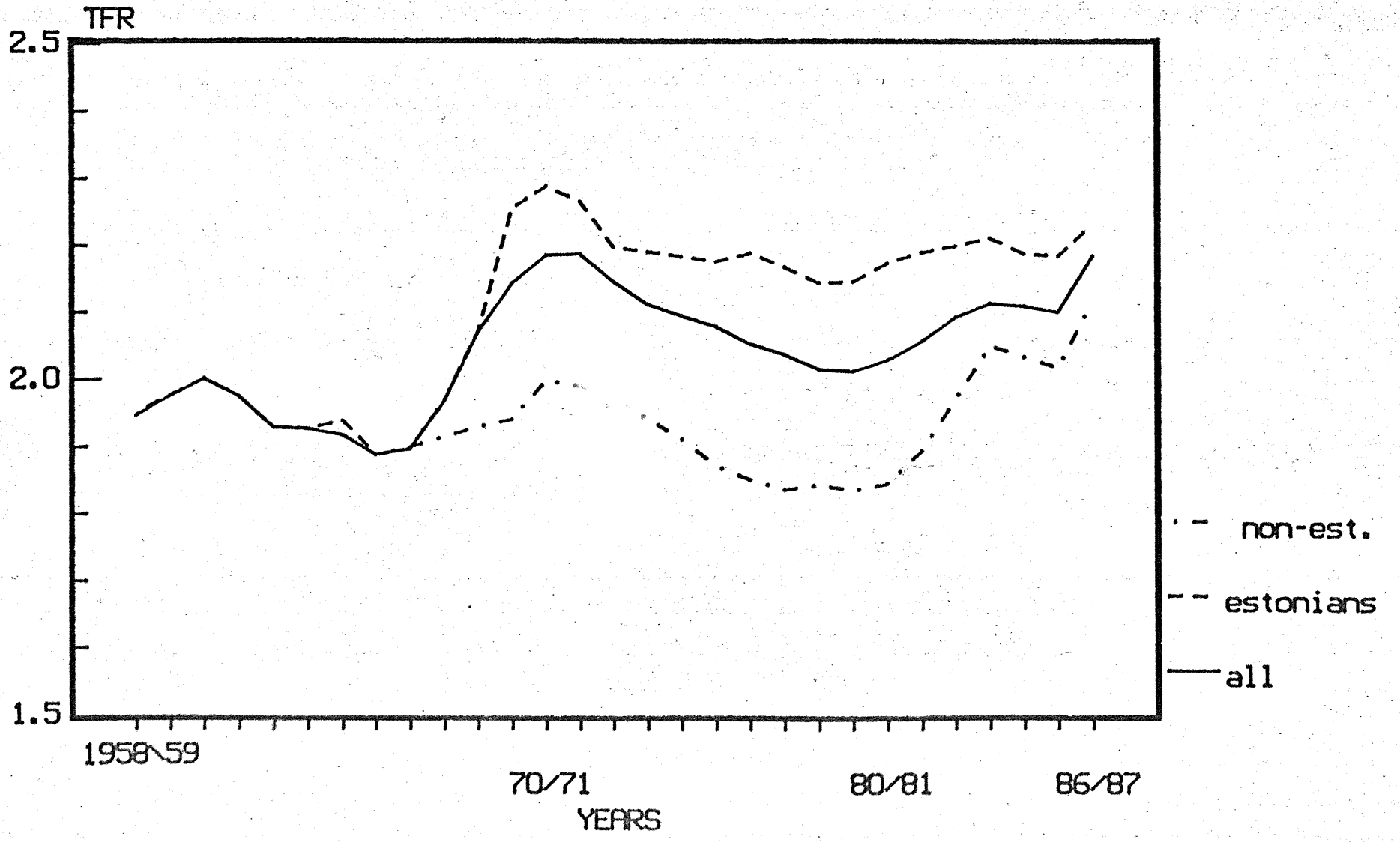


Figure 5 COMPLETED FERTILITY RATES OF ESTONIANS BIRTH COHORTS 1910-1950 AS ASSESSED IN 1985

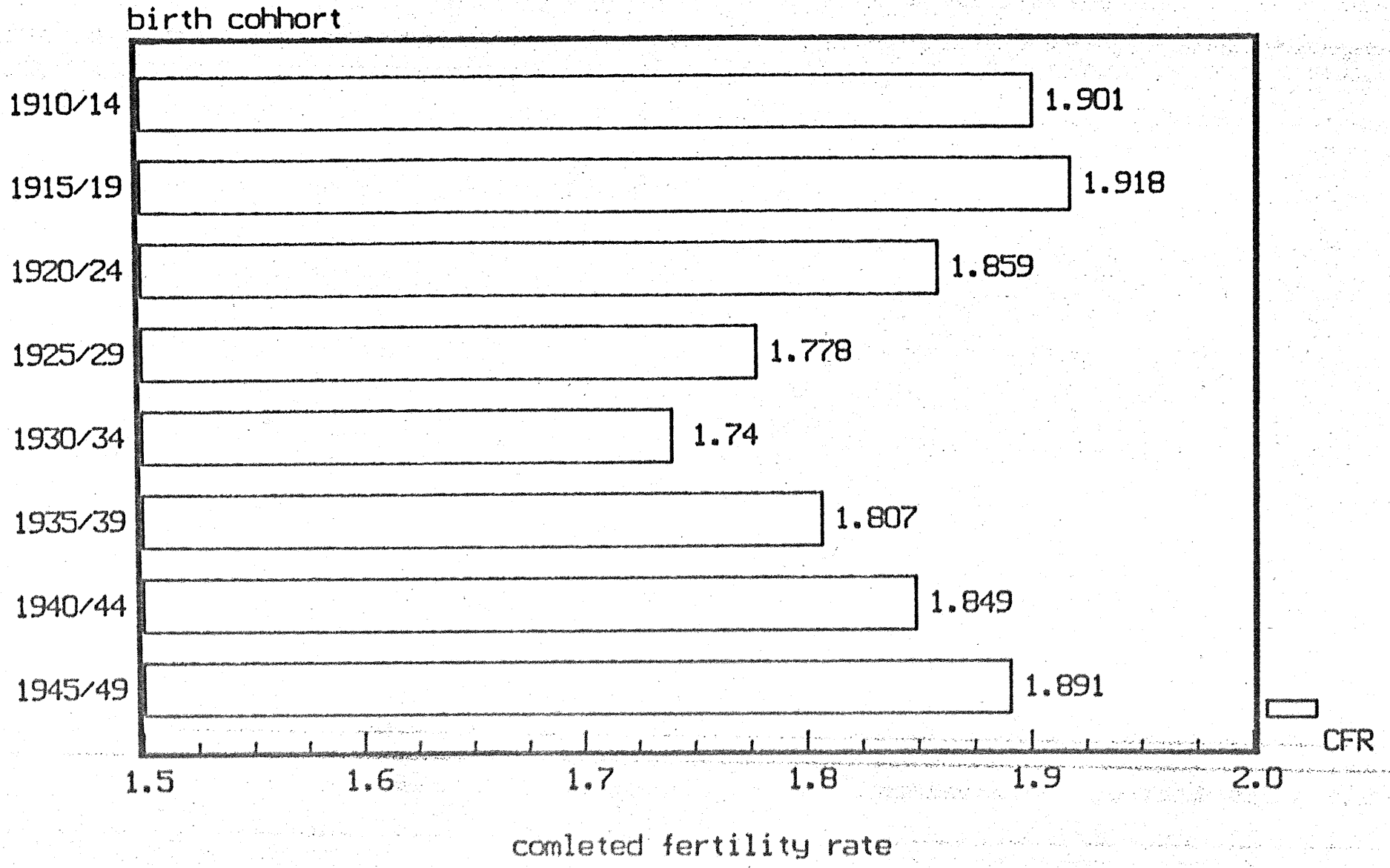
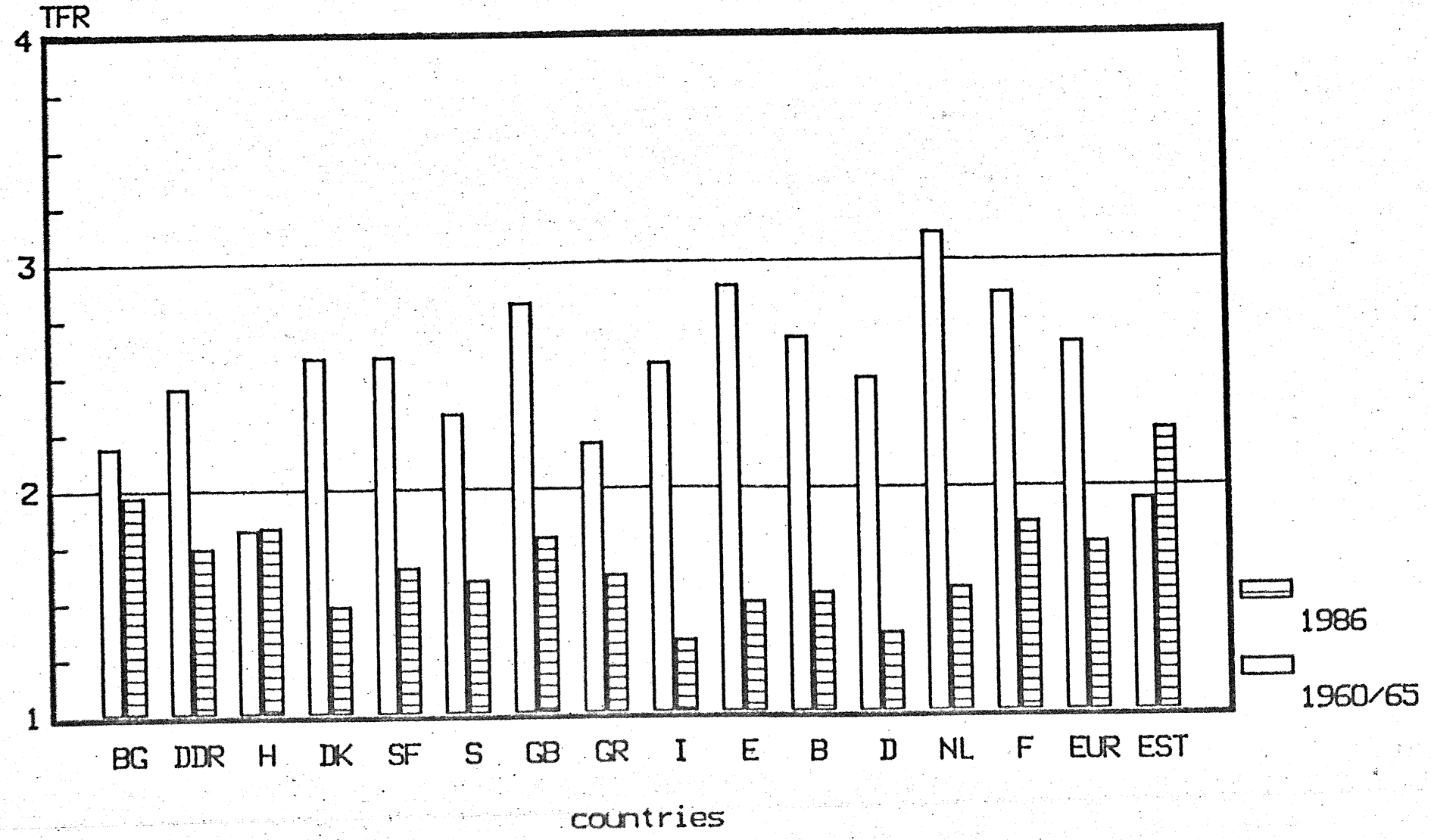


Figure 6 COMPARISON OF TOTAL FERTILITY RATES OF ESTONIANS WITH SOME EUROPEAN COUNTRIES, 1960-64 AND 1986 [Klinger, 1988]



post-war period. In this connection it is amazing now very understudied the mechanism of the baby-boom and its unexpected duration in Europe is.

The high fertility level of the Estonians is especially remarkable for it takes place under the principally similar social changes as in the rest of Europe. The women's individualization is in process in Estonia as everywhere else. Women's employment here is one of the highest in the world: according to the 1979 census data a woman was employed for 37,4 years (brutto-working period) out of her 74,2 years life-span/Пуур, 1987/. The intensity of first marriages is slowing down and the cohabitation is gaining importance which is characteristic of the Estonians in particular. The legitimacy of the first births would help us to have an inkling of the sprea of this phenomenon not yet studied. The Estonians had 35,9% of their first children illegimately in 1987. 38,0% out of the rest had their first children during the first 7 months of their marriage. Hence, the 73,9% of the first children were fecundated out of wedlock. The corresponding data the non-Estonians are 16,9; 28,1 and 44,9% (For such a behaviour difference the rural areas with relatively fewer non-Estonians have smaller number of legitimate births compared to the urban areas). Emancipation and the corresponding reflections are not less common in Estonia than elsewhere in Europe with the exception of fertility level. But one difference with the European countries should still we mentioned: fertility is primarily regulated by the traditional methods and abortions in Estonia because of the lack of modern contraceptives in the USSR. The total abortion rate was 3.22 in Estonia (in 1985) /Авдеев, 1988, n.23/ considerably exceeding the TFR.

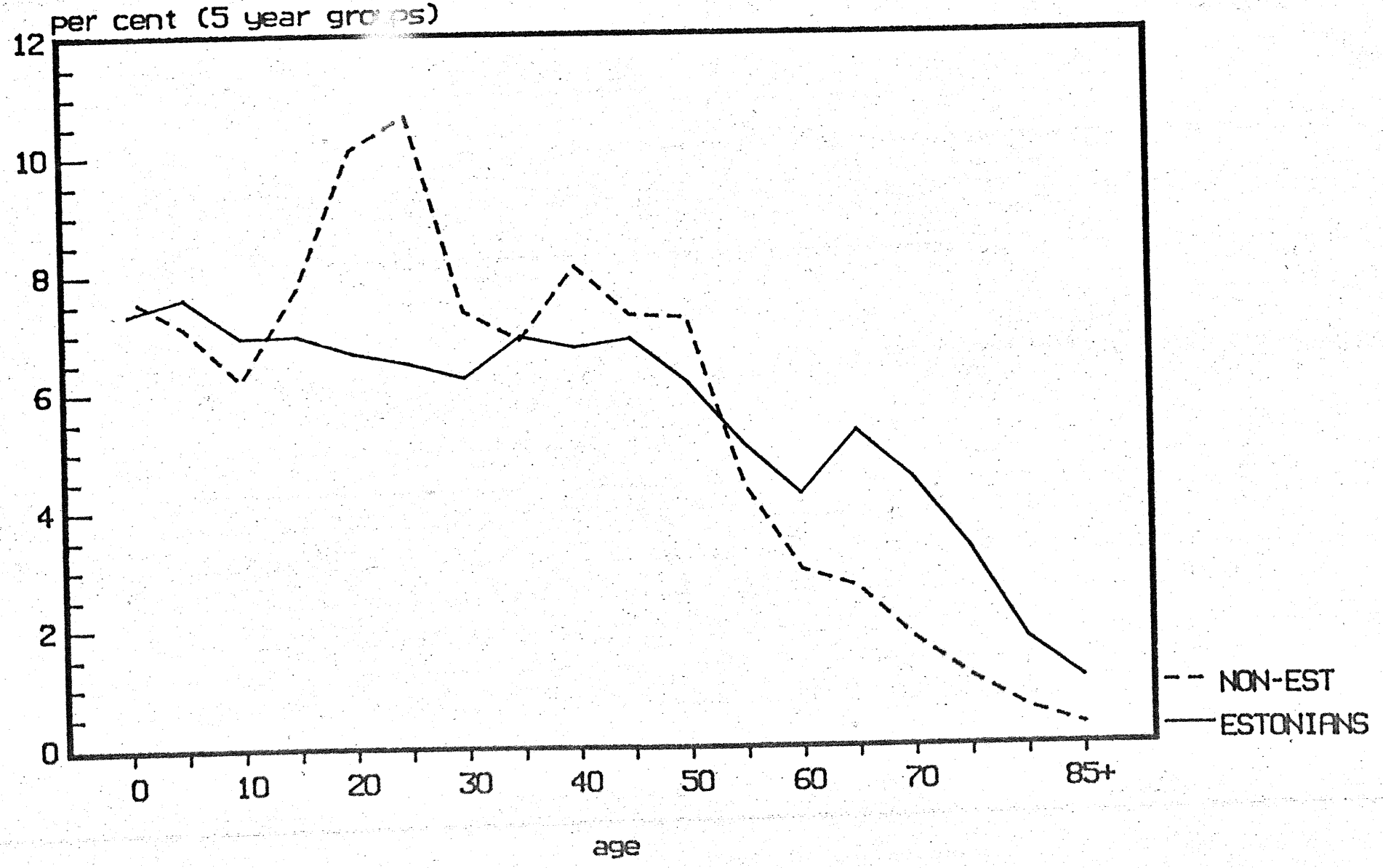
Mortality bears the typical seal of East-Europe.By the end of the 60s the mean lengthof life at birth rose up to the age of 70 years (70,4 in 1969/70) mainly at the expence of the decrease of infant mortality. Later the rise ceased and a certain decrease has been observed. The lenght of

life in 1986/87 was practically at the same level as 20 years ago. Although the men's mortality has been slightly decreasing the sex-differences of the length of life are continously high: 66,4 years at men and 75,1 years at women (1986/87). The Estonian population is characterized by the cause-specific mortality structure of the developed countries. But the same reasons, especially the heart diseases cause death earlier /Хинидов, 1988/. The only published nation-specific life tables (Estonians, non-Estonians) date back to the 1979 census data on the Tallinn population. The length of life of the Estonians (71,35) slightly exceeded the same indicator of the non-Estonians (70,26). But the mortality curve was rather similar /Katus, 1983, p.33-37/. Only the lower mortality among the people over the age of 70 made a noticable difference. It is assumed that even a little more detailed research than the study of the general data would reflect the differences between the native and migrant population of Estonia. Unfortunately, this problem has not been dealt with.

In the formation of the present demographic situation and the next 20 years the most prominant factor among the differnces in the demographic behaviour will be the difference between the age-specific structures of the native and migrant population. Figure 7 provides a comprison of age-nation-specific structures on the basis of the 1979 census data. Leaving aside the gaps caused by war in older cohorts the corresponding structure of the Estonians is nearly stable. The less-numerous generation at the age of 10-34 years is also observable compared to the older ones: this is the impact of the former low fertility. In their turn two of first 5-year age-groups are more numerous giving evidence of higher fertility with the duration of only a decade by 1979. The age-structure of the non-Estonians is rather unstable reflecting primarily the course of migration.

Starting from the age of 55 the gradually growing relative dominance compared to the non-Estonians is also observable. The comparison of those in working age reveals the contrary situation. The children's relative

Figure 7 COMPARISON OF ESTONIANS AND NON-ESTONIANS AGE SRTUCTURE, 1979



shares are close. For the Estonians' old age-structure the population increase became negative in 1978 despite the then already high fertility (The cause why the Estonians' increase remained positive for a prolonged period, up to 1978, is considered the intensive re-emigration of the "Russian Estonians" to fartherland. Their number decreased from 143 600 in 1939 to 72 039 in 1979). The non-Estonians with the fertility below the reproductive level gain the solid natural increase due to the young age-structure. Basing on the census data (1979) the demographic potential of the Estonians had been 0,975 and 1,276 at the non-Estonians, reflecting the 2,5% decrease of the Estonians population and 27,6% increase of the non-Estonians due to their age-structure.

INSTEAD OF CONCLUSION

The demographic prognosis of the Estonian migration hinterland shows the ceasing of the migration potential of its population and the start of population decrease at the end of the first decade of the 21st century. If the migration hinterland would not grow further, the Estonian net migartion becomes negative in 8-12 years.

Estonian internal demographic development would be continously determined by 2 types of demographic behaviour and age structural differentation of the native and migrant population. The firts enlarged cohorts of the Estonians (due to the fertility increase at the end of the 60s) have reached the fertile age. The number of births will grow even in contitions of decreasing fertility. The negative age- structural growth potential of the Estonians has been overcome already. The non-Estonians population will be characterized by rapid aging, the rate of which will be greatly depending the fertility trend. Nevertheless during the first two decad the growth of the non-Estonians in numbers will be remarkable. But this number starts decreasing, first in relative then in absolute terms, at

the end of the first decade of the 21st century.

There is no scientific basis for making mortality prognosis. But the probable decrease of mortality is going to modify the demographic development, intensity of aging in particular.

The effect of the non-synchronic development between Estonia and its neighbouring regions having started already more than 250 years ago is going to formate the population situation in Estonia even next century.

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DATA ON ESTONIAN POPULATION

Table 1 POPULATION

YEAR	NUMBER OF POPUALATION	
1200	150 000 - 200 000	
1500	240 000 - 280 000	
1620	70 000 - 100 000	
1695	350 000 - 400 000	
1712	150 000	
1850	730 000	
1881 (29.12)	881 455	
1897 (28.01)	945 068	
1922 (28.12)	999 473	(1 107 059)*
1934 (1.03)	1 018 402	(1 126 413)*
1940	1 011 900	(1 121 939)*
1941 (1.12)		(1 017 800)*
1955	1 157 300	
1959 (15.01)	1 196 791	
1965	1 284 800	
1970 (15.01)	1 356 079	
1975	1 426 033	
1979 (17.01)	1 464 476	
1985	1 528 196	
1986	1 540 696	
1987	1 554 696	
1988	1 569 296	

1881-1941 Territory of 1881 census
1955-1988 Territory of Estonian SSR
* Territory of Estonian Republic
(date of census)

SOURCES:
/Eesti NSV...,1940; 1967-1987; Moora, 1961, lk.82
Nõukogude...,1978, lk.40; Tarvel, 1970, lk.76; vahtre, 1973
lk.236; Катус, 1982, с.62-65,103-104; Лиги, 1974, с.19-21; Палли
1977, с.216; 1980, т.1,с.133/

Table 2 CRUDE BIRTH AND DEATH RATES AND NATURAL INCREASE

YEAR	CRUDE BIRTH RATE	CRUDE DEATH RATE	NATURAL INCREASE
Last decades XVII cent.	39.0	33.3	5.7
1730-1734	40.7(1)	20.3(2)	20.4
1772	42.5(3)	27.9(3)	14.6
1782-1785	37.6	30.1	7.5
1786-1790	35.3	35.1	.2
1791-1795	41.6	28.6	13.0
1796-1800	41.7	31.7	10.0
1801-1805	39.7	28.9	10.8
1806-1810	37.0	31.2	5.8
1811-1815	37.8	30.0	7.8
1816-1820	36.8	25.6	11.2
1821-1825	38.3	22.5	15.8
1826-1830	37.8	29.0	8.8
1831-1835	36.5	29.3	7.2
1836-1840	33.9	26.2	7.7
1841-1845	32.8	27.5	5.3
1846-1850	32.3	29.1	3.2
1851-1855	34.7	29.8	4.9
1856-1860	35.2	25.0	11.2
1861-1865	39.1	25.3	13.8
1866-1870	31.8	32.5	-0.7
1871-1875	33.7	22.3	11.4
1876-1880	31.6	21.2	10.4
1881-1885	30.3	23.0	7.3
1886-1890	29.4	21.0	8.4
1891-1895	28.1	20.1	8.0
1896-1900	29.2	19.1	10.1
1901-1905	28.5	19.0	9.5
1906-1910	26.2	18.6	7.6
1910-1914	25.0	18.6	6.4
1915-1919	19.3	25.1	-5.8
1920-1924	19.6	16.9	2.7
1925-1929	17.8	16.5	1.3
1930-1934	16.8	14.9	1.9
1935-1939	16.1	15.0	1.1
1940-1943	17.3	20.1	-2.8
1950-1954	18.3	13.4	4.9
1955-1959	16.9	11.1	5.8
1960-1964	16.0	10.5	5.5
1965-1969	14.7	10.7	4.0
1970-1974	15.5	11.0	4.5
1975-1979	15.0	12.0	3.0
1980-1984	15.5	12.2	3.3
1985-1987	15.7	12.0	3.7

(1) 28 Parishes

(2) 36 Parishes
(3) 10 Parishes in Tartumaa

1782-1860 Rakvere County in North Estonia
1861-1910 North Estonia

SOURCES:
/Eesti NSV..., 1967-1987; Laas, 1978, lk.84-86; Rahvastiku-probleeme..., 1937, lk.109,135; Vahtre, 1973, lk.211-262; Палли, 1980, т.с.101, т.2, с.21-29; Рашин, 1956, с.154,188/

Table 3 AGE STRUCTURE
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YEAR	AGE GROUPS								
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
1782									
WHOLE	27.0	21.2	16.2	12.4	9.2	6.1	4.9	2.2	0.6
MEN	24.8	21.8	16.6	12.4	9.4	6.6	5.2	2.3	0.6
WOMEN	29.3	20.6	15.8	12.4	9.0	5.6	4.6	2.0	0.6
1795									
WHOLE	26.8	19.9	18.2	14.2	9.8	6.4	3.1	1.2	0.4
MEN	26.2	19.6	18.8	14.5	10.0	6.1	3.1	1.2	0.4
WOMEN	27.4	20.2	17.6	13.9	9.6	6.7	3.1	1.2	0.4
1816									
WHOLE	27.0	25.9	14.7	11.8	10.9	6.4	2.5	0.6	0.2
MEN	30.1	26.7	13.2	9.8	10.4	6.3	2.7	0.6	0.2
WOMEN	24.2	25.1	16.1	13.6	13.2	6.5	2.3	0.6	0.2
1834									
WHOLE	28.5	21.9	16.8	14.9	8.1	6.2	2.7	0.7	0.1
MEN	30.1	22.5	17.1	14.1	7.6	5.5	2.5	0.6	0.0
WOMEN	27.1	21.3	16.6	15.6	8.6	6.9	2.9	1.0	0.2
1850									
WHOLE	22.5	22.7	19.8	13.8	11.0	7.1	2.5	0.6	0.0
MEN	23.4	23.6	19.0	14.2	10.9	6.7	2.3	0.4	0.1
WOMEN	21.7	21.9	20.5	13.8	11.1	7.5	2.7	0.8	0.0
1858									
WHOLE	22.7	19.5	20.4	15.3	10.7	7.6	3.2	0.6	0.0
MEN	23.7	20.2	19.8	14.3	11.1	7.8	3.2	0.4	0.0
WOMEN	21.8	18.9	21.0	16.6	10.3	7.4	3.2	0.8	0.0
1881									
WHOLE	23.6	19.8	16.6	12.2	10.9	8.8	5.5	2.0	0.6
MEN	24.5	20.3	16.4	12.0	10.8	8.6	5.2	1.8	0.4
WOMEN	22.8	19.3	16.8	12.4	11.1	9.0	5.8	2.2	0.7
1897									
WHOLE	22.0	19.1	16.4	14.1	10.5	8.1	6.2	2.9	0.6
MEN	22.9	19.7	16.4	14.0	10.4	7.8	5.8	2.6	0.5
WOMEN	21.2	18.6	16.4	14.2	10.7	8.4	6.7	3.2	0.7
1922									
WHOLE	15.1	19.5	16.7	14.1	12.4	10.1	7.6	3.5	1.0
MEN	16.2	20.8	16.6	13.7	12.3	9.8	6.9	3.1	0.7
WOMEN	14.1	18.4	16.9	14.4	12.6	10.4	8.2	3.9	1.2

1934									
WHOLE	15.2	14.1	18.0	16.4	12.7	10.8	8.1	4.6	1.2
MEN	16.3	15.2	19.3	15.3	12.0	10.1	7.2	3.7	0.8
WOMEN	14.2	13.1	16.8	15.6	13.3	11.3	8.9	5.4	1.4
1959									
WHOLE	15.8	14.0	16.9	14.5	11.7	11.9	8.5	5.0	1.6
MEN	18.4	16.2	18.9	13.7	11.0	10.7	6.7	3.5	1.0
WOMEN	13.8	12.4	15.3	15.2	12.3	12.8	10.0	6.2	2.1
1970									
WHOLE	14.7	15.0	14.4	15.8	13.6	9.7	9.4	5.4	1.9
MEN	16.4	16.9	16.3	16.9	12.9	8.5	7.5	3.5	1.0
WOMEN	13.2	13.3	12.8	14.9	14.3	10.7	11.0	7.0	2.7
1979									
WHOLE	14.9	13.9	15.9	13.5	14.2	11.3	8.2	6.0	2.1
MEN	16.4	15.5	17.6	14.4	14.7	9.9	6.4	4.1	1.1
WOMEN	13.6	12.5	14.3	12.8	13.9	12.5	9.6	7.8	3.0
1987									
WHOLE	14.7	13.8	14.8	15.5	12.3	12.5	8.8	5.4	2.4
MEN	16.1	15.1	16.0	16.7	12.6	12.0	6.8	3.4	1.2
WOMEN	13.5	12.6	13.6	14.3	12.1	12.8	10.5	7.1	3.4

1782-1858 Rakvere county

SOURCES:
/Rahva...,1924, lk.19-20; rahvastikuprobleeme..., 1937, lk.15; Vahtre, 1973, lk.152; Катус, 1982, с.195-196/

Table 4 AGE-SPECIFIC FERTILITY RATES

YEAR	FERTILITY BY AGE GROUPS						
	-19	20-24	25-29	30-34	35-39	40-44	45-49	TFR
1922/23	9.6	89.9	138.4	121.2	89.2	41.9	5.9	2.48
1930	13.6	83.8	103.9	97.0	65.9	30.7	3.4	1.99
1935	15.5	78.3	105.0	89.9	62.1	26.0	2.8	1.90
1958/59	20.1	122.3	119.1	72.9	41.9	12.0	.9	1.95
1965/66	23.5	129.9	114.6	68.8	30.7	9.4	.7	1.89
1970/71	31.7	161.8	131.6	73.1	31.0	7.1	.5	2.18
1975/76	34.6	165.4	122.1	60.9	26.1	6.2	.3	2.08
1980/81	43.8	167.3	111.8	55.4	22.0	4.9	.3	2.03
1985/86	44.0	169.5	117.1	59.7	25.0	4.8	.2	2.10

Table 5 MEAN EXPECTATION OF LIFE AT BIRTH

YEAR	WHOLE	MEN	WOMEN
1783-1794 *	29	25	34
1857-1858 **	39	...	...
1896-1897	41.6	...	...
1932-1934	56.4	53.1	59.6
1958-1959	68	64	72
1965-1966	70	66	74
1969-1970	70.4	65.5	74.5
1979-1980	69.4	64.2	74.2
1985-1986	70.4	65.5	74.9

* Karuse parish
** Rakvere parish

SOURCES:
/Eesti NSV..., 1967-1987; Rahvastik..., 1930, lk.68-87; Rahvastikuprobleeme..., 1937, lk.141; Vahtre, 1973, lk.224; Ковалев, 1969, с.98; Палли, 1980, т.2,с.63/

Table 6 MIGRATION FLOWS
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YEAR	MIGRATION OUTFLOW			MIGRATION INFLOW		
	Total	Internal	External	Total	Internal	External
1953	85670	...	...	108719	...	...
1954	91441	...	...	102604	...	...
1955	87416	...	...	94292	...	...
1956	89852	50664	39188	106553	56049	50504
1957	86419	50676	35743	94279	55143	39136
1958	85476	50879	34597	92261	56742	35519
1959	75439	47579	27860	84283	53834	30449
1960	81469	52032	29437	85219	55262	29957
1961	72627	51802	20825	81249	55072	26177
1962	74416	51806	22610	84306	56055	28251
1963	73057	51893	21164	85990	57672	28318
1964	74517	51889	22628	85875	56271	29604
1965	75125	51926	23201	83419	54116	29303
1966	80152	54136	26016	86268	56229	30039
1967	81124	55012	26112	87407	57456	29951
1968	86008	56583	29425	96089	58740	37349
1969	90135	59227	30858	103310	61184	42126
1970	88204	58110	30094	100864	59500	41364
1971	89900	60049	29851	100820	61146	39674
1972	87533	59183	28350	95599	60295	35304
1973	87518	58554	29073	94774	58756	36018
1974	88071	56591	31480	92756	57527	35229
1975	87756	56789	30967	92099	57829	34270
1976	82236	53726	28510	87078	53770	33308
1977	80315	53928	26387	87876	53355	34521
1978	80272	53389	28883	85469	53273	32196
1979	79286	53093	26193	83378	52287	31091
1980	75307	50427	24880	82435	50936	31499
1981	75397	49727	25670	81856	50000	31856
1982	74167	48631	25536	79870	48954	30916
1983	72350	47300	25050	77547	47468	30079
1984	71376	47682	23694	77694	48225	29469
1985	72318	48062	24256	80485	48523	31962
1986	71902	48389	23513	79905	49155	30750
1987	71001	47747	23254	78850	49106	29744

SOURCE:
/Катус,Пуур, 1989/