

Reconstructing Ukrainian Fertility During the Years of Cataclysms in the 1930s and 1940s

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1. Introduction

Few nations of Europe have experienced such a continued series of crises and cataclysms as the population of the Ukraine over the course of this century. With little time to recover from the deep wounds of World War I and the following civil war of 1918-1921, the forced collectivism of 1931-33 brought about hunger and starvation only to be followed by the years of mass repressions 1934-37 and, subsequently, World War II. After this, periods of hunger came again, and during the 1950s the painful reconstruction of the economy began.

The scars left by these crises on the demography of the Ukraine are twofold. First, they affected the collection of data which has resulted in only fragmentary information on Ukrainian population trends. Second, they affected the demographic trends themselves. "Official" census data, which are quite controversial, indicate a decline of the total population by two million between 1933 and 1937. In 1926 the Ukraine had a population of 29 million which, due to very high fertility, had increased to 32 million by 1933. This was followed by a decrease to 30.1 million stated for 1937 and an increase to 31.6 million by 1941. The census of 1970 gives 47.1 million inhabitants for the Ukraine. The *USSR Demographic Yearbook 1989*¹ gives a figure of 51.45 million for 1989. With this population size the Ukraine today is one of the largest nations of Europe.

This paper will first give a short sketch of the scientific controversy and discussion concerning the scale of the population losses in the Ukraine. Because an important part of the problem is the lack of birth statistics for 17 out of 20 years during the 1930s and 1940s, this paper then will make an effort to reconstruct the missing data through an exercise in modelling cohort and period fertility rates using the COALE-TRUSSELL model. By first converting the empirical 5-year age groups into single-year age groups, then transforming the period information into cohort data,

applying the model fertility schedules and reconverting them into period data, plausible estimates can be generated that result in a complete record of Ukrainian fertility since 1925.

2. Scientific controversy over millions of lost Ukrainians

Demographic trends in the Ukraine from the end of the 19th century to the middle of the 1920s have been studied in detail by demographers working in the Demographic Institute of the Academy of Sciences of the Ukrainian SSR (1919-1938) which was the first institute of its kind in Europe. Since the end of the 1920s, however, there has been a ban on all kinds of scientific population analysis for political reasons. Until the 1950s no systematic authentic data on natural population changes or on the size and age structure of the population are available. Certain demographic summary indicators that were officially published were clearly falsified. The materials of the 1937 population census in the USSR was declared as "imperfect" and its organizers were repressed. O. KVITKIN, the Sorbonne-educated statistician who was in charge of both the 1926 and the 1937 censuses was shot. But there seem to exist unpublished memoirs relating to the 1937 census by one of his assistants, KURMAN, who survived many years of prison and camp and died as recently as 1980.² These seem to raise doubts again whether the 1975 published figure for the population size in 1937 could be seen as the suppressed total of the 1937 census or a conscious lie. Further studies into more recently available documents seem to be needed to clarify the many questions surrounding the 1937 all union census.

In the Ukraine the uncertainty about the 1937 census and other statistical material has also led to wild speculation about the extent of population losses due to repression and famine. Political declarations condemning the genocide of the Ukrainian people have stated far too high figures which have no scientific basis. For instance in a declaration of the Ukrainian Peasant Democratic Party officially published in "Literaturna Ukraina" of July 5, 1990, a figure of 8 million losses solely in the rural population of the Ukraine during the famines of the 1940s was stated.³ Also in the West several very high numbers are frequently being mentioned.

The following reconstruction of Ukrainian fertility during the 1930s and 1940s can be the basis for a more accurate calculation of losses by stepwise population projection and a comparison of projected values with empirically measured values in the years after the cataclysm. The reconstruction will be based on the assumption that the age-specific reproductive behavior of birth cohorts of women follows approximately the standard pattern as described by the three-parameter model by COALE and TRUSSELL. Although this assumption is not entirely unproblematic during times of crisis it is much more robust than a similar assumption for period fertility patterns. A depressed level of fertility or a change in the shape of the age pattern will find its expression in changing values of the 3 parameters; irregular short term changes in period fertility that are due to changes in the timing of birth will first be filtered out partly when smoothing and converting the period data into single-year age groups and secondly when a smoothed cohort line will be fitted to the data. Another important assumption is of course the reliability of the age-specific period