

Chapter 3

Three Types of Fertility Behavior in the USSR

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The vast differences in regional fertility levels in the republics of the former USSR and their implications for differential population growth are well known. Although groups of the population with different characteristics of reproductive behavior are distributed over the USSR by a distribution other than simply by republics, the most outstanding differentials are inter-republic variations. These can largely be explained by differences in the ethnic composition of the republics and regions which are inseparable from their culture and history.

3.1 Horizontal and Vertical Indicators

These cultural and historical peculiarities of the republics of the USSR have two dimensions. If the time axis is taken as a base they may be designated as horizontal and vertical. The horizontal dimension refers to the peculiarities of demographic behavior in societies with different cultural traditions but at approximately the same level of historical demographic development. Such horizontal differences result from various social and other factors, such as Catholic, Orthodox, or Muslim traditions. Certain factors determine the similarity of many behavioral standards across horizontal differences. One of these has always been

the fact that high mortality rates necessitated the maintenance of high fertility levels, which were reflected in the cultural norms of all traditional societies. Depending on the situation this tendency is expressed differently, but, as a rule, the basic pronatalistic orientations are similar in all traditional cultures; the differences between them are of a specific, secondary nature. In this sense the horizontal differences are variations within the same historical type of fertility behavior.

In the vertical dimension one encounters a different type of variation which is determined by fundamental historical changes that affect societies of different cultural background. It is the modernization of society that leads, among other factors, to a rise of such cross-culturally valid phenomena as low mortality rates, making the traditional pronatalistic standards of behavior inappropriate. A reaction to these changes is the appearance of a new historical type of fertility behavior which gradually spreads to new sections of the population and other countries and regions. The vertical variations are those between different historical types of fertility behavior. When one such type is superseded by another this forms the basis of what is usually called fertility transition. The horizontal and vertical variations interweave; they affect each other and play a different role at different stages of the historical evolution. At the same time it is obvious that intra-type variations are larger than inter-type ones. It is thus not surprising that in the period of demographic transition the differentiation of fertility sharply increases, as can clearly be seen from the variations in fertility between the republics. Here the demographic transition brought about great changes in the reproductive behavior which had spread to the largest part of the country's population by the mid-20th century. However, the demographic transition is not yet complete in all republics. Parts of the Soviet population have for many decades differed, and still differ, in those fundamental types of fertility behavior which can readily be seen from the levels of the quantitative fertility indicators.

3.2 Three Fertility Patterns

Regardless of which fertility indicator is studied, one can see marked differences between the different parts of the USSR, with trends that sometimes diverge. There even seems to be a polarization between republics with respect to their fertility level. At one end of the scale we

find republics where fertility indicators were already low in the 1950s and have remained so for the following decades (Russia, Ukraine, Byelorussia, Georgia, Lithuania, Latvia, and Estonia). Here the level and trend of fertility changes differ little from those in most developed countries. At the other end there are four Central Asian republics (Uzbekistan, Kirghizia, Tajikistan, and Turkmenistan) with an invariably high level of fertility over the entire post-World War II period which generally exceeds the level of many developing countries. Apart from these two polar groups there is an intermediate group of republics (Kazakhstan, Azerbaijan, Moldavia, and Armenia) where the level of fertility began to drop after 1960, rapidly in some cases.

The quantitative indicators of fertility in every group of republics cannot be separated from the qualitative features of demographic behavior. Together they form the basis for the distinction between the three typical fertility situations in the USSR: pre-transitional, transitional, and post-transitional.

The share of the different groups of republics in the total number of births is unequal and changes over time. In the past 40 years the contribution of the pre-transitional Central Asian republics to all births in the USSR has been steadily growing, whereas that of post-transitional republics, especially of Russia, has been decreasing (*Table 3.1*).

To get a better understanding of the specific details of each fertility regime (post-transitional, transitional, and pre-transitional) let us review in greater detail three representatives of these groups: Estonia, Azerbaijan, and Tajikistan.

Tables 3.2, 3.3, and 3.4 give some indicators of fertility levels in these republics (for comparison the figures for the USSR as a whole are given). Some obvious conclusions can be drawn from these indicators. They show how great the gap in fertility levels is between the republics which are at different stages of demographic transition. From the tables one also can see the trends in fertility over the past several decades. Even levels and trends of such rough indicators as the crude birth rates (CBRs) point to vast differences in fertility behavior in the three republics considered (*Figure 3.1*). The differences remain after the crude birth rate has been standardized by age. As is seen from the charts in *Figure 3.1*, after the effect of changes in age structure has been eliminated (as a standard the 1987 USSR population was used), the rise of

Table 3.1. Number of children born in the USSR and the proportion in post-transitional, transitional, and pre-transitional republics.

Year	Number of children born in the USSR (in 1,000s)	Post-transitional republics	Transitional republics	Pre-transitional republics
1940	6,096	86.1	7.8	6.1
1950-54	24,597	82.1	10.2	7.7
1955-59	25,738	79.0	12.0	9.0
1960-64	24,706	74.7	13.8	11.5
1965-69	20,763	70.7	14.4	14.9
1970-74	21,934	70.0	13.6	16.4
1975-79	23,595	68.6	13.6	17.8
1980-84	25,692	67.5	13.6	18.9
1985-89	21,965	65.2	13.8	21.0

Post-transitional republics: Russia, Ukraine, Byelorussia, Georgia, Lithuania, Latvia, Estonia.

Transitional republics: Kazakhstan, Azerbaijan, Moldavia, Armenia.

Pre-transitional republics: Uzbekistan, Kirghizia, Tajikistan, Turkmenistan.

the CBR in Tajikistan became even sharper and its fall in Azerbaijan deeper than in the case of the non-standardized rate.

Indirect standardization of fertility based on Coale's method (the Princeton Indexes) gives additional information on variations in fertility behavior of the population of the three republics and its trends. Coale's indexes are interpreted as a measure of deviation of the fertility level from its hypothetical maximum value. They make it possible to break down the changes in general fertility (the index of overall fertility, I_f) into changes in marital fertility (I_g) and into the proportion of married women (I_m). The data given in *Table 3.2* show that the trends of the index of overall fertility in the republics considered are very similar to those of the crude birth rate.

For Estonia it turns out that the substantial increase in the index of overall fertility in the 1980s cannot be explained with the help of the two other indexes because the main cause of this rise was a sharp increase in nonmarital fertility (in 1958 2,888 births were out of wedlock, in 1978 there were 2,698, and 5,788 in 1988).

In Azerbaijan, on the contrary, the index of overall fertility shows a significant fall: in the 1970s the drop was due to a combined decrease of I_g and I_m . In the 1960s and especially in the 1980s the situation

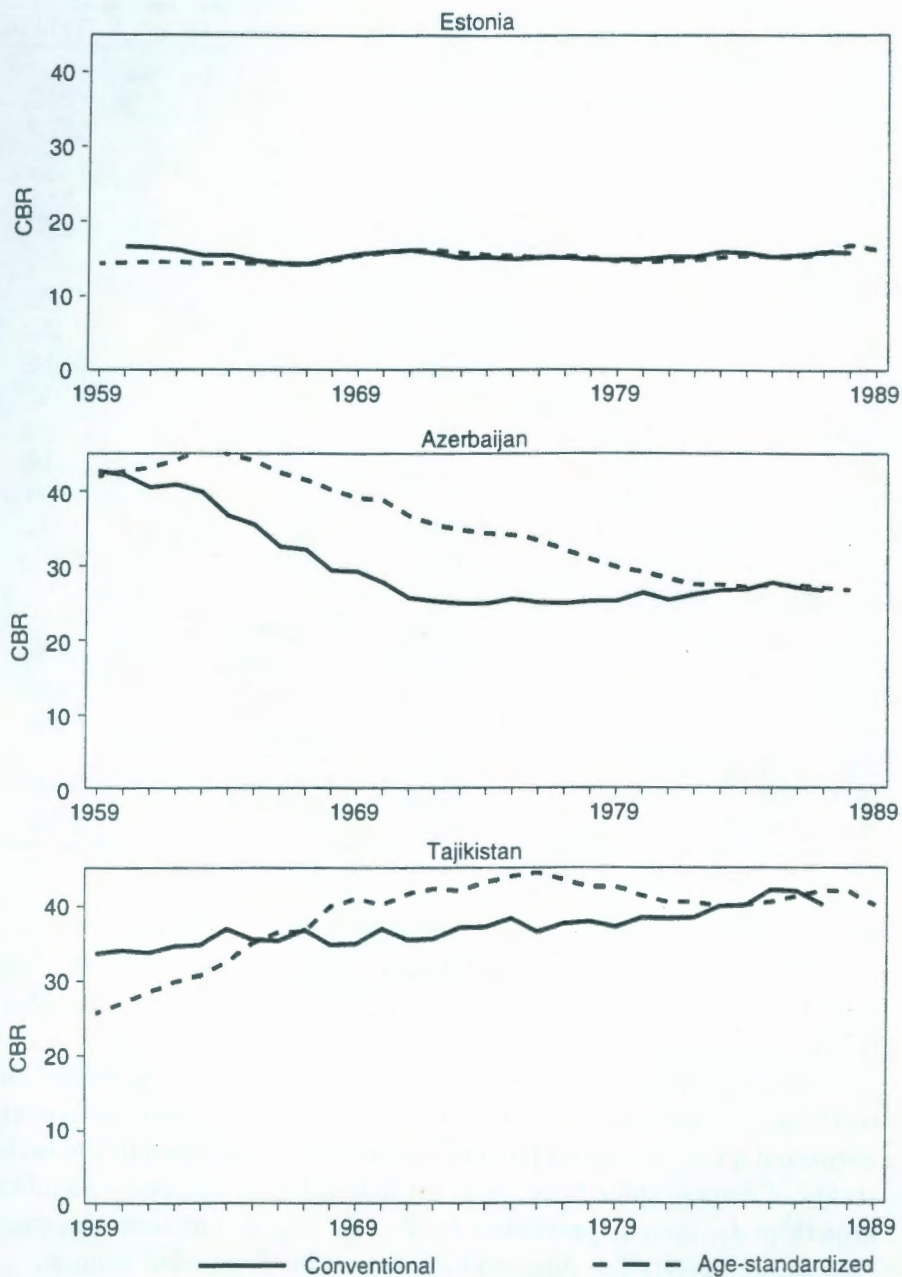


Figure 3.1. Crude birth rate (conventional and age-standardized) in Estonia, Azerbaijan, and Tajikistan, from 1959 to 1989.

Table 3.2. General fertility indicators in the USSR, Estonia, Azerbaijan, and Tajikistan, in selected years.

Year	USSR	Estonia	Azerbaijan	Tajikistan
<i>Number of births (in 1,000s)</i>				
1960	5,341.0	20.2	165.8	69.7
1988	5,381.1	25.1	184.4	201.9
<i>Crude birth rate (per 1,000)</i>				
1960	24.9	16.6	42.6	33.5
1988	18.8	15.9	26.5	40.0
<i>Overall fertility (I_f)</i>				
1959	0.237	0.163	0.410	0.309
1970	0.187	0.168	0.367	0.456
1979	0.194	0.165	0.269	0.455
1989	0.199	0.181	0.254	0.437
<i>Marital fertility (I_g)</i>				
1959	0.344	0.239	0.586	0.365
1970	0.257	0.228	0.511	0.594
1979	0.276	0.225	0.473	0.612
1989	0.267	0.216	0.405	0.580
<i>Proportion married (I_m)</i>				
1959	0.606	0.580	0.681	0.767
1970	0.665	0.634	0.680	0.738
1979	0.652	0.641	0.549	0.686
1989	0.671	0.643	0.609	0.705
<i>Total fertility rate</i>				
1958-1959	2.800	1.930	4.940	3.840
1988	2.450	2.240	2.800	5.350

was different. The proportion of married women remained constant or even increased (during the 1980s) which weakened the effect on overall fertility of the decline in marital fertility typical for this transitional republic.

In Tajikistan the trends in all three indexes in the 1980s were similar to those in Azerbaijan. In the 1960s and 1970s, however, the republic witnessed a rise of marital fertility which is often observed in the earliest stages of demographic transition. At first this rise induced a significant growth of I_f ; later it prevented I_f from falling, as has been the case in Azerbaijan despite the diminishing proportion of married women.

For the total fertility rate (TFR), an indicator free from the influence of age structure, a varying picture has been observed since the late

Table 3.3. Age-specific period fertility rates (per 1,000 women) in the USSR, Estonia, Azerbaijan, and Tajikistan, in selected years.

Year	USSR	Estonia	Azerbaijan	Tajikistan
<i>15-19 years</i>				
1958-1959	29.2	20.1	43.0	26.1
1988	46.8	45.5	26.7	38.4
<i>20-24 years</i>				
1958-1959	162.2	122.3	209.6	137.8
1988	191.0	180.4	199.3	312.0
<i>25-29 years</i>				
1958-1959	164.8	119.1	266.5	176.5
1988	138.8	124.3	189.5	301.1
<i>30-34 years</i>				
1958-1959	110.1	72.9	216.1	169.7
1988	73.9	64.7	97.9	216.9
<i>35-39 years</i>				
1958-1959	66.6	41.9	162.7	154.4
1988	31.1	25.9	39.1	132.8
<i>40-44 years</i>				
1958-1959	24.1	12.0	73.5	87.4
1988	7.9	6.3	11.1	63.9
<i>45-49 years</i>				
1958-1959	5.0	0.9	29.6	33.2
1988	0.6	0.2	1.2	10.1

1950s. In some republics the TFR tended to rise noticeably and then to fall (Central Asian republics); in other cases (Kazakhstan, Moldavia, Azerbaijan, and Armenia) it has been strongly declining all the time; in a third group it decreased slowly with a tendency to stabilize in the second part of the period (Russia, Byelorussia, and Lithuania); and in yet another group relative stability has been registered with slight changes in either direction (Ukraine, Georgia, Latvia, and Estonia).

Against the background of this wide variety the three republics under review (Estonia, Azerbaijan, and Tajikistan) typify the trends observed over this period. The TFR in post-transitional Estonia is characterized by fluctuations from 2.0 to 2.2 births per woman. In transitional Azerbaijan it shows a constant decline from the mid-1960s; finally, in pre-transitional Tajikistan the total fertility rate increased until the mid-1970s and started a moderate decline thereafter.

Table 3.4. Selected period and cohort fertility indexes in the USSR, Estonia, Azerbaijan, and Tajikistan, in selected years.

Year	USSR	Estonia	Azerbaijan	Tajikistan
<i>Proportion of children borne by women under age 35 in hypothetical female cohorts (per 100)</i>				
1958-1959	83.30	86.50	74.40	66.40
1988	91.90	92.60	90.70	80.70
<i>Proportion of births of the first three orders in the total number of births (per 100)</i>				
1959	80.20	92.10	63.50	53.30
1988	87.70	93.20	85.40	62.10
<i>Mean age of mother in hypothetical cohorts (years)</i>				
1958-1959	28.50	27.90	30.40	31.90
1988	26.40	25.90	27.50	29.30
<i>Number of children borne by female cohorts under age 35</i>				
1941	2.00	1.73	3.57	3.85
1946	1.93	1.72	3.16	4.11
1951	2.01	1.83	3.01	4.34
1955	2.06	1.90	2.63	4.31

The analysis of the changing patterns of age-specific fertility rates assists in providing a better picture of the fertility evolution over the past 30 years (*Table 3.3*). In all three republics the age curves of fertility change in the way one would expect in the course of demographic transition. Until the transition has been completed the intensity of child-bearing in the older reproductive ages (45-49, 40-44, 35-39, 30-34, and even 25-29 years) decreases generally: the higher the age the greater the decrease. At younger ages (20-24 and 15-19 years) the birth intensities, in contrast, increase. The age-specific fertility patterns in the three republics at the beginning and at the end of the period are depicted in *Figure 3.2*. In 1988, as well as three decades before, distribution of births by age of mother in Tajikistan and Estonia, respectively, are good examples for pre- and post-transitional patterns. Over 30 years no fundamental changes in the curve have occurred.

In Tajikistan the 1970s were characterized by a downward trend in fertility at older age groups, especially above age 35, which is a clear indication of the onset of transitional processes. However, such changes have failed so far to alter the type of the curve. In the 20-24 and 25-29 age groups the rates stopped rising in the late 1970s, but are still very

high – higher than in the early 1960s. The age-specific fertility rate in the 15–19 age group has practically remained unchanged over the whole period: it is lower today in Tajikistan than in the Ukraine, Russia, or Latvia. In Estonia the reason for the relative stability of the curve is quite obvious: the transformation process had already been completed in 1959, although some rejuvenation of fertility is still under way. This may be partly due to specific circumstances in Estonia, but generally one may say that if any increase of fertility is to be expected in Estonia, or in other post-transitional republics, to at least replacement level, it is not likely to originate from age groups over 30; it is much more likely the source would be the younger age groups.

Being very distinct from both Tajikistan and Estonia, Azerbaijan has witnessed a quick shift from one form of fertility curve to another. Like in other republics in a fertility transition, the age-specific fertility rate kept on falling in practically all age groups, but the speed of reduction clearly accelerated in the older age groups.

Scrutinizing the combination of changing total fertility rates and mean ages of mothers characterized by the points in a three-dimensional chart (see *Figure 3.3*) gives a general idea of the relationship between the fertility level and changes in the fertility curve. We again see that in Estonia the total fertility rate stays relatively stable (the point on the chart hardly moves either left or right) against the background of a somewhat reduced mean age of mother.

In Azerbaijan the picture is quite different. The main trend is represented by simultaneous movement in the three-dimensional space from left to right and from top to bottom. It is obvious that in this case the two movements cannot be separated because a considerable reduction in total fertility is necessarily accompanied by a strong reduction in births for older reproductive age groups.

And, finally, in Tajikistan the point on the graph has been moving left (rising fertility) without noticeably moving down for a long period. In the 1970s the movement to the left, in general, stopped (although we cannot say that it has been followed by a clear-cut movement to the right), but the point definitely began to move down. In other words, there was a noticeable rejuvenation of fertility which has not yet been accompanied by a decline in the level of fertility. When looking for an interpretation, it must be borne in mind that the considerable growth of fertility level in Tajikistan (as well as in other Central Asian republics)

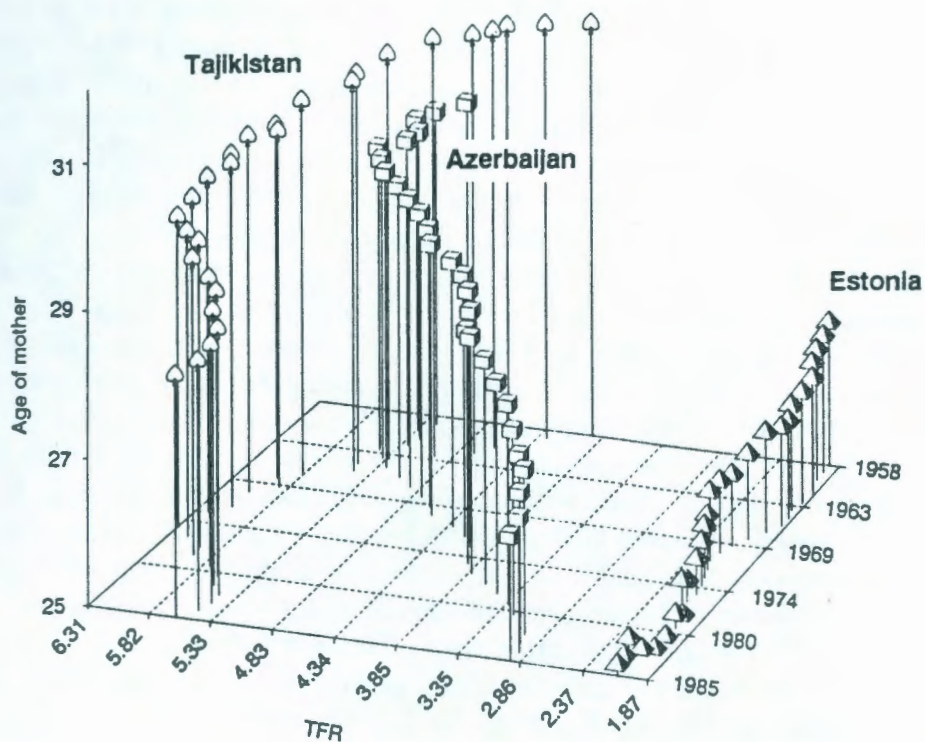


Figure 3.3. Total fertility rates and mean ages of mother in Estonia, Azerbaijan, and Tajikistan, from 1958 to 1985.

and in Azerbaijan in the 1960s, ought to be interpreted with caution as at that time births tended to be unregistered. Inadequate birth registration was gradually overcome later.

The distribution of births by order, together with the indicators of the level of fertility and the age pattern of fertility, is the third basic quantitative characteristic of the reproductive process (*Table 3.4*). In post-transitional Estonia the distribution of births by order has a form which is typical for most Western industrialized countries: a very low proportion of fourth and successive births, the overwhelming majority of births being concentrated in the first two orders (see *Figure 3.4*). No great changes in the distribution have taken place in the past three decades. At the same time it should be remembered that the proportion

of first births has somewhat decreased, whereas that of second and third births has increased, resulting in the rise of births in the 1980s.

In pre-transitional Tajikistan the birth-order distribution has a completely different shape. This can also be found in other Central Asian republics, as well as in many developing countries. The pattern is characterized by the lack of a clear-cut concentration of births by order: for the first four orders of births the proportions are low and close to each other. The changes over time have been insignificant, although indicative, like many other changes in the beginning of transitional processes. Specifically, the proportion of fifth births has somewhat decreased, whereas that of first and second births has gone up. Similar, but much clearer, changes can be observed in Azerbaijan: the almost pre-transitional distribution changes visibly to a pattern typical for the post-transitional situation with a significant reduction of higher-order births.

Finally, the last indicator in our comparative study of fertility in three republics is cohort fertility (*Table 3.4*). Estimations of cohort fertility based on current birth statistics have been made relatively recently (Vishnevsky *et al.*, 1988). On the whole, they confirm the significant differences between the three republics found in this analysis of period data, without necessarily duplicating them. *Figure 3.5* shows the changes in cumulative fertility of different female generations by the ages 35 and 40 compared with the total fertility for different periods in Estonia, Azerbaijan, and Tajikistan.

In Estonia the period and cohort indexes are stable and close to each other. Here, like in many other post-transitional republics low and stable levels of fertility of present-day female generations predominate and there are no essential changes in the pace of family formation from generation to generation. In Azerbaijan both the period and cohort indexes point to a substantially decreasing level of fertility. At the same time the TFR has reduced much more than the cumulative fertility, which is obviously due to an acceleration of family formation in the cohorts born between 1940 and 1950. In Tajikistan there are more essential differences between the period and cohort indexes of fertility. Although both are high and steady, their trends are somewhat different. For example, a moderate reduction of the TFR in the early 1970s took place despite stabilized, or even slightly rising, cumulative fertility of the cohorts. Hence the fertility decline was probably a result of some recent short-term changes in family-formation patterns.

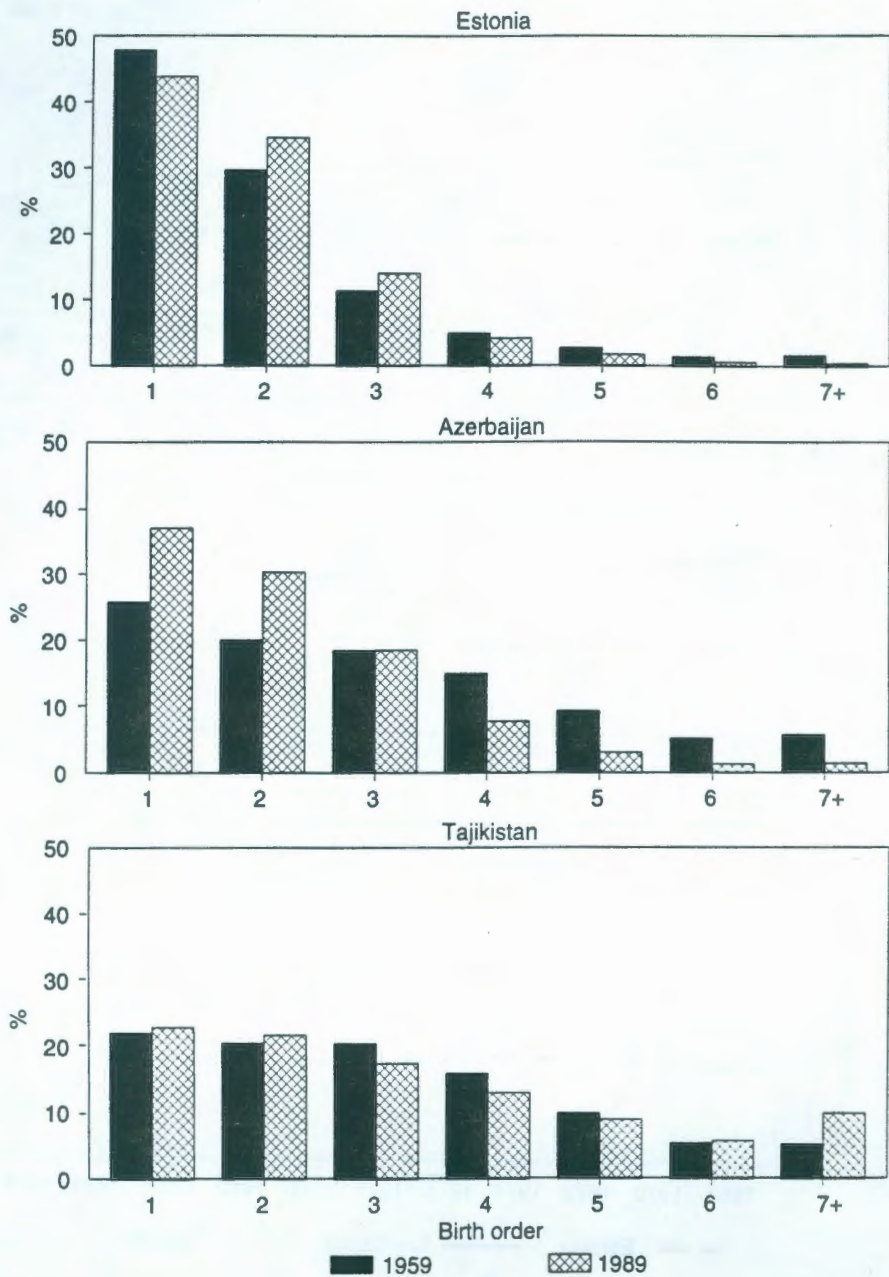


Figure 3.4. Distribution of births by order in Estonia, Azerbaijan, and Tajikistan, in 1959 and 1989.

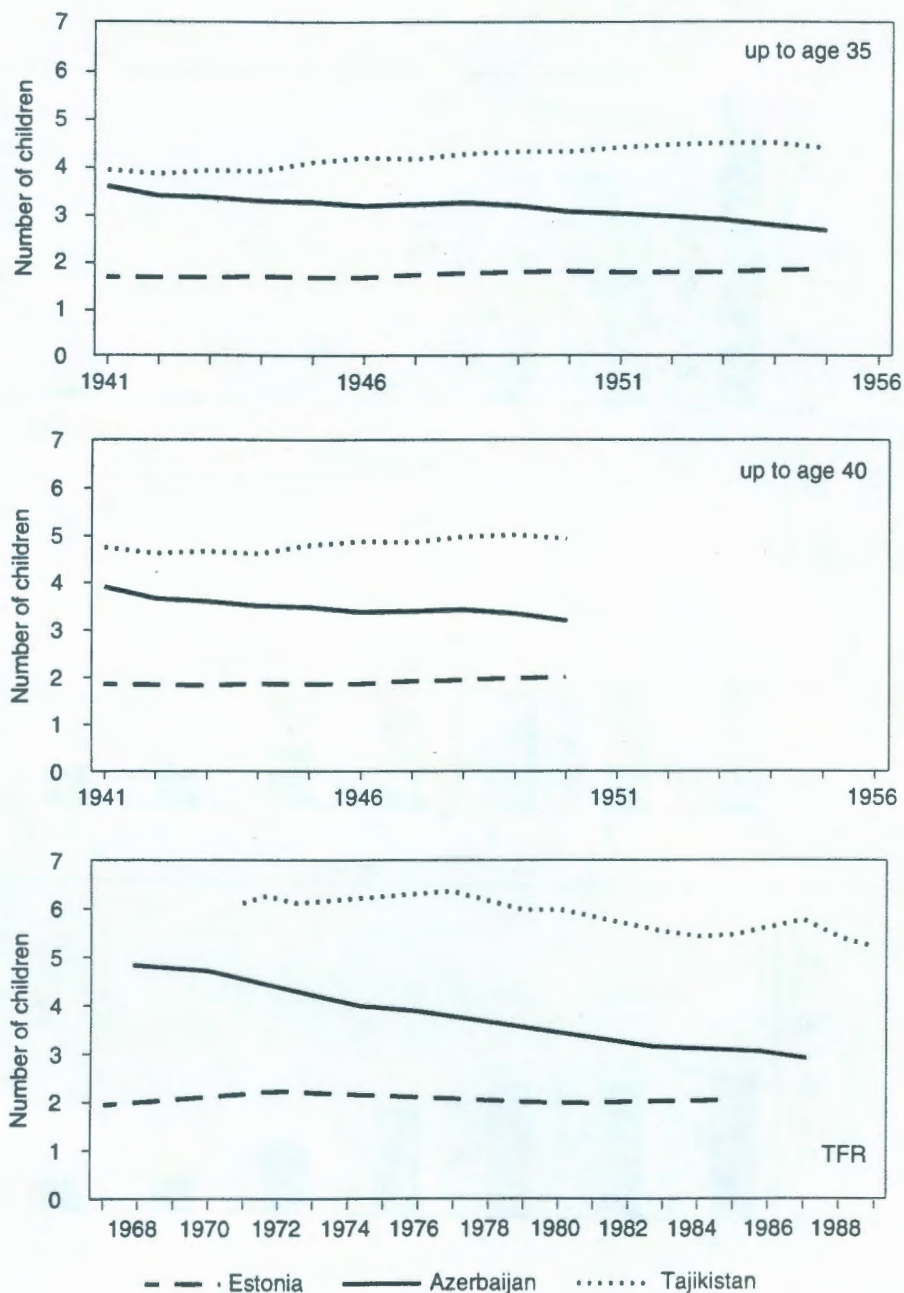


Figure 3.5. Average number of children borne by different female generations by the ages 35 and 40 and the period TFR in Estonia, Azerbaijan, and Tajikistan.

3.3 Future Fertility Patterns

What do we think about the future fertility pattern in the republics? Proceeding from the well-recognized theory of demographic transition, we expect a change toward the post-transitional type of procreative behavior in all republics. At some time in the near or more distant future Azerbaijan and even Tajikistan are going to approach Estonia both in the type of behavior of the majority of the population and in the fertility indexes. However, the theory of demographic transition generalizes the Western experience, assuming fundamental changes in the traditional pronatalistic norms in specific countries and regions. This leads to doubts about the universal nature of the theory. The critics of the transition theory generally stress the non-transient character of the horizontal cultural differences; for instance, the specifics of Islam which allegedly withstand the modernization of the demographic process.

The future will always be uncertain. We can only refer to one of the founders of the theory of demographic transition, Notestein, who said that the only way to learn about the future is to live up to that period (Notestein, 1950). Considering the past and the present, however, and in particular when looking at the Soviet experience, we may say that the empirical evidence presented in this chapter fails to support the doubts concerning the universal nature of the theory. At the beginning of the 20th century the level of fertility in Russia and the Ukraine was much higher than now in the regions of Islamic cultural traditions which could also have been explained by the cultural peculiarities of the Orthodox church. At that time the idea that Russians would in the future have the same reproductive behavior as French Catholics or Estonian Protestants would have seemed absurd. Nonetheless, it has happened. Only 30 years ago Christian Armenia differed little from the Muslim Central Asian republics in its fertility level. Today it stands closer to the European republics. Even Azerbaijan, which is strongly affected by Islamic traditions, is, as we can see, following the same route as Armenia.

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