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Prospects for below replacement fertility

The direction of contemporary fertility trends in the developed countries: Further decline, plateau or upswing?

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For many different reasons people want to know the *real* level of fertility, as well as where it seems to be heading. Moreover, they would want the information to be embodied in a single measure. Reliable and precise knowledge about contemporary fertility levels and trends is important because it provides the main ingredients for population projections. The fertility level is the baseline, and the trends help to establish assumptions about future realistic and unrealistic trends. From a broader societal viewpoint, this knowledge supplies critical inputs for numerous policy debates and decisions regarding, for instance, pension schemes, health services and costs, insurance rates, educational systems, availability of man/woman-power for the economy and armed forces, the relative weight of nations in the international arena, national pride and regulations governing international migration.

The specific indicators used by demographers to measure fertility progressed from the crude birth rate (CBR) to the total fertility rate (TFR) and the gross reproduction rate (GRR; Kuczynski, 1928 and 1935), and subsequently to the net reproduction rate (NRR; Lotka, 1934 and 1939). Hajnal (1947) introduced the concepts of "postponement," "anticipation" and "making up" of childbearing and clarified their effects on period fertility rates, namely he demonstrated why "family size" can and usually remains relatively stable yet period rates may, and at times do, "fluctuate widely." In the middle of the 20th century Henry (1953), Ryder (1951, 1986) and Whelpton (1954) applied and developed the cohort approach to fertility research. Ryder (1964) also elaborated the technique of "demographic translation," namely the interrelationships of period and cohort fertility measures.

Cohort fertility inquiry has one major advantage and a principal drawback, provided the total fertility rate is the main tool of analysis. The comparison of total cohort fertility rates (TCFRs) in time and space automatically removes timing effects. The TCFRs are approximately equivalent to the actual average Hajnal "family size" in contrast to the total period fertility rates (TPFRs) which may be larger or smaller than the average family size, if women of the cohorts in the reproductive ages practiced childbearing anticipation or postponement. On the other hand, only TCFRs of generations that have concluded their childbearing can be compared thus restricting the analysis to events that occurred in the past, namely two or three decades ago when women were in their prime childbearing ages.

Even though demographers throughout much of the 20th century were more or less aware of the distortions inherent in the CBRs, the TPFRs and the (period) NRRs, these were considered the best available indicators and adequate for whatever descriptive or

policy purposes of the time. In the seminal 1998 paper, in which J. Bongaarts and G. Feeney refined Ryder's translation technique, they elaborated a method intended to eliminate the tempo effects of the TPFRs and introduced the concept of the adjusted total fertility rate (ATFR). In addition to Ryder other authors had investigated the decomposition of period fertility into tempo and quantum components of period total fertility rates. Pressat (1969) as well as Butz and Ward (1979) independently constructed timing indexes measuring the tempo effect (somme des éléments de calendrier) and the average cohort fertility rate which provided the quantum component. But it was the work of Bongaarts and Feeney (1998) that was picked up by the profession and which touched off a stream of criticism, applications and attempts to further refine the method (Kim, Schoen 2000; Kohler, Philipov 2001; Kohler, 2002; Philipov, Kohler 2001; Schoen 2004; Sobotka 2003a, 2004; van Imhoff, Keilman 2000; Zeng, Land 2001). To date all efforts to refine period TFRs, to adjust TFRs, to improve the way in which contemporary fertility is measured, depicted and presented take the cross-sectional period approach as the point of departure, as the base for a better understanding of contemporary fertility.

In contrast, the method and analysis elaborated in this paper, explore whether taking the cohort approach as the point of departure possibly leads to more satisfactory results in gaining an understanding of levels and trends of *contemporary* fertility. The cohort approach is not meant to replace the period approach, but it is perceived as a complement. The cohort analysis demonstrates that it provides information and insights not revealed adequately by period measures. Specifically, (i) an informed utilization of the cohort approach can provide a more realistic portrayal of long-term fertility trends; (ii) the values of the (cohort) total fertility rates tend to be closer to the average number of children born per woman; and (iii) cohort age-specific fertility rates and their cumulated values are a more realistic illustration of average life-time childbearing strategies, i.e. of the timing of births by age.

Arguably an important shortcoming of the adjusted TFR is the fact that some (unknown at the time) quantum effects are treated as tempo effects. There is a danger that the adjusted TFR may be creating false expectations, e.g., the ATFR can be higher than eventual actual TPFRs and/or TCFRs if some or all of the "postponed" births of young cohorts do not materialize. Whatever the stated improvements or imperfections of the ATFRs, the respective information is embodied in a single measure and may contain "distortions." Values and trends of the ATFRs can be considered distortions or misrepresentations when compared to values and trends of the completed cohort fertility. ATFR values can be considerably higher or lower than the corresponding cohort rates and the ATFR trends can go in directions diametrically different from those of the TCFRs as demonstrated in the Appendix.

With the intention of describing as realistically as possible the current level of fertility and its likely trend in the near future, the method and analysis presented in this paper, admittedly not perfect, because it is impossible to accurately predict future fertility behavior of any cohort, is based on the following main principles:

1. Select and analyze a set of measures and theories.

Why? A single indicator and any isolated theory have advantages but also shortcomings or weaknesses. A set of appropriately selected measures and their trends, combined with theories provides a more comprehensive picture in which the shortcomings or weaknesses of one measure or theory are complemented by information gained from another one.

2. Use the cohort fertility approach.

   Why? Measures of cohort fertility by definition eliminate tempo effects.

3. Use not only total cohort fertility rates (TCFRs), but also cumulated cohort fertility rates (CCFRs) up to certain ages.

   Why? TCFRs provide information about fertility behavior which took place two to three decades ago, whereas CCFRs inform about fertility behavior of the recent past/"present."

4. Analyze childbearing behavior of the recent past as a standard for making judgments about likely and unlikely remaining fertility of cohorts currently in the middle of their childbearing experience.

   Why? The analysis of childbearing advancement or postponement of cohorts which concluded their reproductive periods in the recent past provides certain, although imperfect, standards for comparison with presumed future childbearing during the remainder of their reproductive periods of cohorts currently in the middle of their childbearing experience.

5. Specify the main contemporary socio-economic-political-cultural mechanisms shaping fertility behavior – a theoretical framework.

   Why? A reasonably accurate understanding of the principal societal mechanisms shaping contemporary fertility behavior will provide the basis for making further judgments about whether the empirically established trends are likely to continue or be reversed.

In sum, the exposition in this paper aims to demonstrate that total cohort fertility rates (TCFRs) together with cumulated cohort fertility rates (CCFRs) and their recent trends combined with an evaluation of alternative scenarios of their remaining fertility in the foreseeable future based on historical experience and theoretical analysis provides a reasonable and credible portrayal and understanding of *contemporary* fertility.

The paper has two overlapping objectives, a methodological and a substantive one. The first objective is to demonstrate that the application of a set of cohort fertility measures

and procedures in conjunction with a theoretical framework provides a reasonably realistic understanding of contemporary fertility levels and trends.

The second objective is to update and elaborate the principal substantive findings of the recently published comprehensive analysis of contemporary fertility levels and trends in low-fertility countries (Frejka and Sardon, 2004). The main conclusion in this book is the following:

> "Throughout Europe, in the large English speaking overseas countries as well as in Japan, fertility — especially cohort fertility but possibly also period fertility— is almost certain to remain as low as it was at the turn of the century and it is likely to decline further in the first decade of the 21st century and perhaps even beyond" (p. 375).

The paper concludes with a discussion of policy measures which could be adopted if it is considered desirable to modify fertility trends in the developed countries so that these would approximate replacement fertility.

The universe of countries, data and methodological considerations

The data for 36 low-fertility countries are from the data bank of the Observatoire Démographique Européen, which is especially concerned about the quality of the data and their comparability in time and space.[1] The countries and their classification by region (see, for instance, Table 2) are the same as analyzed in the recently published book. The various methodological procedures and principles are also identical to those applied in the book. The highlights[2] are:

a. The 27th birthday is the dividing point between young and older women.

b. Changes in the age patterns of childbearing are observed by comparing cumulated fertility rates of an age range of one cohort with that of another, usually 10 or 5 years apart. When the cumulated fertility rates of a cohort born later (a younger cohort) is *higher* than that of a cohort born earlier (an older cohort), the difference is considered a *surplus*. When the age-specific fertility rates of a cohort born later (a younger cohort) is *lower* than that of a cohort born earlier (an older cohort), the difference is considered a *deficit.*

c. Even in populations of late childbearing, i.e. in which around 60 percent or more children are born after the women's 27th birthday, very few are born when women are in their forties. Thus one can estimate TCFRs of cohorts born in the mid 1960s that have not reached the end of the full reproductive period by the beginning of the 21st century without danger of significant error. Only minor parts of these TCFRs need to be estimated; almost always less than 2-3 percent, never more than 15 percent.

Past fertility levels and trends

To provide a historical background a brief and simplified overview of cohort fertility trends during the second half of the 20th century is presented in Table 1. Completed fertility was declining throughout this period in the low-fertility countries. The cohorts

[1] Compared to Frejka, Sardon (2004), data for one additional country, Poland, are included in the analysis in this paper.

[2] For a detailed description consult Chapter 2. *Methods* in Frejka, Sardon (2004).

which started childbearing immediately after the second world war and effectively concluded it around 1970, represented in the table by the 1931 birth cohort, on average had a TCFR of 2.6 births per woman (These were the "baby-boom" cohorts in the Western countries). The average TCFR declined to the replacement level among the cohorts with the major part of their childbearing during the 1970s, the 1949 birth cohort in Table 1. Cohorts which experienced most of their childbearing in the late 1980s and 1990s, the 1967 birth cohort in the table, on average had an estimated TCFR of 1.8, i.e. distinctly below replacement.

It is significant that the decline of the average TCFR slowed down over time. The annual rate of decrease between the average TCFR of the 1931 to the 1949 cohort was 1.3 percent, more than twice the rate of the downward trend between the 1949 and the 1967 birth cohort, 0.6 percent per year.

An individual country examination of TCFR levels and trends of the youngest birth cohorts, those of the late 1960s and early 1970s, reveals a considerable heterogeneity, however, with one commonality, namely among these cohorts fertility has been declining everywhere (Table 2).

Among the cohorts born in the late 1960s and very early 1970s the lowest fertility was in the German speaking countries of West Central Europe, and in Eastern Europe, around 1.5 births per woman. Those were also the countries in which birth cohorts of the 1960s had been experiencing the fastest fertility decline. There were two other regions of below average TCFRs accompanied by rapid fertility declines among the 1960s cohorts, Southern Europe and the Baltic States (Table 2). The 1964 birth cohort in Italy had the lowest value of all, 1.4 births per woman.

On the other end of the spectrum, TCFRs of the mid-1960s cohorts were the highest in Australia and New Zealand, as well as Macedonia and Yugoslavia, closely followed by the Nordic countries. The West European countries, especially France and England & Wales, were also in this category of countries with cohort fertility close to replacement (Table 2).

A division of all countries in the study into two basic large groups, namely all formerly socialist countries (FSCs), on the one hand, and all "western" countries (WCs), on the other, reveals that the overall TCFR decline of the youngest cohorts with completed fertility (those born in the late 1960s and around 1970) is driven mainly by the fertility decline of the former, the FSCs. The average annual TCFR decline of the youngest cohorts in the FSCs compared to the 1965 cohorts was -2.0 percent, whereas in the WCs it was -0.7 percent. This was in contrast to the TCFR declines of those born during the 1940s when the average annual decline in the WCs was twice as large as in the FSCs, namely -1.5 compared to -0.7 percent.

Fertility patterns of cohorts in the midst of childbearing early in the 21st century

At the beginning of the 21st century fertility was declining in virtually all low-fertility countries among the cohorts that were in the middle of their childbearing years, i.e. which were born during the early to mid-1970s. The descent was a continuation of previous trends (Table 3). Cumulated cohort fertility rates of young women before their 27th birthday had been declining starting with birth cohorts of 1960 everywhere, and in the WCs even among 20 cohorts before that. Throughout these countries, with the exception of Southern Europe, fertility declines were relatively even and spread out from those of 1940 for over 30 cohorts. In Southern Europe the descent in childbearing of young women increased considerably among the 1960s birth cohorts; average annual declines of the CCFRs up to the 27th birthday were usually around six percent or more.

There was one distinct exception, the United States, where fertility of young women had stabilized among the 1960s birth cohorts, but a moderate decline then resumed among the cohorts of the early 1970s. There was also an indication that fertility of young women in the Federal Republic of Germany and in the Netherlands might be stabilizing. Note an interesting contrast between the CCFR levels at which fertility of young women in these three countries was stabilizing. In the United States on average women of the 1960s birth cohorts had borne one child. In the former Federal Republic of Germany the CCFR of the 1972 cohort was 0.5 and in the Netherlands even less. In some other countries, namely Switzerland, Italy, Spain and Japan, CCFRs of young women were also very low among the cohorts of the early 1970s yet these were still declining.

In the FSCs fertility of young women did not change much among the cohorts born before 1960. Childbearing of these women started to decline moderately among the 1960s birth cohorts, and the descent accelerated sharply among the cohorts of the early 1970s (Table 3). On average the annual rate of fertility decline of young women in the FSCs was -5.2 percent compared to -3.8 percent in the WCs. Despite this relatively rapid fertility reduction of FSCs young women, their level of childbearing was still considerably higher than in the WCs. By their 27th birthday young women of the 1975 cohort in the FSCs had borne 0.85 children, compared to an average of 0.55 in the WCs.

These averages conceal a wide variation of country experiences. All low-fertility countries fall within the range of about 0.2 to 1.0 children borne on average by young women of the 1975 birth cohort. Typically most WCs gravitate towards the lower numbers of around 0.5 to 0.6 children. The exceptions were Italy and Spain with CCFRs between 0.2 and 0.3 children per woman. In the FSCs, young women of the 1975 cohort had usually borne 0.8 to 0.9 children; the lowest was experienced in Slovenia, 0.6 children. These values have to be examined in the context of customary age patterns of fertility and their changes, but first we will investigate the fertility behavior of women in the initial stages of childbearing.

Also, what remains unknown is the extent to which the almost universal childbearing reduction of the early 1970s cohorts is predominantly a quantum decline or

whether young women are postponing some or all of the foregone births until later in life. We shall deal with this in another section.

Fertility patterns of cohorts in the initial stages of childbearing early in the 21st century

In the majority of the low-fertility countries childbearing of women that were starting to bear children, defined here as women up to their 22nd birthday, was declining among the cohorts born in the mid- to late 1970s (Table 4). On the other hand, in a few countries fertility of these youngest women appeared to be stabilizing.

In the WCs the fertility decline of the youngest women had been in progress in roughly 30 cohorts starting with those born around 1950. The countries of Southern Europe again lagged, and the fertility descent of the youngest women got under way only with the 1960s birth cohorts, but they made up for the later start with rapid rates of decline.

In the FSCs there was only scant change in fertility of the youngest women among cohorts born prior to the 1970s. Slovenia and Croatia were the exceptions with some decline of the CCFRs up to the 22nd birthday among the 1960s cohorts. It was the collapse of the centrally planned autocratic political and economic system around 1990 that was apparently instrumental in generating a new lifetime fertility pattern as demonstrated by the extraordinarily rapid decline in young women's childbearing in successive cohorts of the 1970s (Table 4 and Figures 1, 2 and 3).

The fertility trends of the youngest women in the United States differed conspicuously from the other countries. For 15 cohorts (1960 to 1975) the CCFRs up to the 22nd birthday stabilized at the unusually high value of 0.5 births per woman. Following that a rapid decline in childbearing of young women was experienced among the birth cohorts of the late 1970s.

There were indications that fertility of the youngest women might be stabilizing in several countries among the cohorts born during the 1970s; in New Zealand and England & Wales at a relatively high level of 0.3 births per woman; at lower levels in France, the Netherlands, the former Federal Republic of Germany, Portugal, Australia and Japan.

Generally in the Western countries the CCFRs of the youngest women were around 0.1 – 0.2 births per woman among the cohorts born in the mid- to late 1970s. There were a number of countries in which these women had CCFRs of 0.1 or fewer births per woman yet these were still declining, however, as they were already so low, they cannot decline much further. This applies, for instance, to Sweden, Switzerland, Italy and Spain. Japan has a tradition of a late start in childbearing with very few women having children in their teens or early twenties. But the lowest CCFR up to the 22nd birthday thus far was recorded for the 1978 birth cohort in Italy, 0.04 births per woman.

In the FSCs CCFRs up to the 22nd birthday among the cohorts born during the 1970s were between 0.2 and 0.4 births per woman, about two to three times higher than in the

WCs (Table 4). This difference is rooted largely in the divergent developments of age patterns of childbearing of the two types of countries in the past several decades. The generally rapid rates of decline among the cohorts born during the late 1970s imply further reductions of childbearing in the FSCs in the near future.

Life-time strategies of childbearing

Levels and trends in fertility behavior of young women are an inherent component of changes in life-time strategies of childbearing. A simple way to obtain an overall picture is to examine the proportions of total childbearing that women are experiencing when young compared to when they are older (Table 5).

In the 1965 and 1970 birth cohorts, the youngest for which reasonable estimates are available about their life-time fertility strategies, as a rule, 60 percent or more of childbearing in the WCs occurred after the 27th birthday. In the FSCs women had 60 to 80 percent of their children before they reached their 27th birthday (Table 5). The differences between these two types are expressed in more detail by the curves of cohort age-specific fertility rates in Figure 1. Note in the left-hand panels that the peak of childbearing in a typical WC, Norway, for the birth cohorts since the 1930s was when women were in their mid- to late 20s, whereas in a typical FSC, the Czech Republic, it was in the early 20s. Data in Table 5 and in Figure 1 also demonstrate changes that have occurred from the cohorts born around 1930 to those born in the 1960s and 1970s.

In the WCs the postponement of childbearing has been in progress beginning with the birth cohorts of the 1940s, in Southern Europe 10 to 20 cohorts later (Table 5 and the example of Norway in Figure 1). The relatively high proportion of children borne by older women is an expression of the fertility postponement process.

In the FSCs changes in the age patterns of childbearing through the cohorts of the early 1960s were for the most part in the direction of advancing childbearing into the younger ages (Table 5 and the example of the Czech Republic in Figure 1). In some of these countries these changes were minor, in others considerable.

Evidence in the previous two sections, namely the continued decline of fertility among young women in the birth cohorts of the late 1960s and the 1970s, has demonstrated that the postponement process apparently continued in the WCs towards the end of the 20th century (Tables 3 and 4, and right-hand panel in Figure 1). "Apparently," because it will become clear only in the future to what extent this descent is indeed a continuation of childbearing postponement and the extent to which it is a quantum decline.

In the FSCs the apparent childbearing postponement began, as a rule, with the birth cohorts of the late 1960s (Tables 3 and 4 and the right hand-panel in Figure 1). Again, only the future will tell to what extent the decline in the fertility of young women in the cohorts born during the 1960s and early 1970s is a quantum decline or a childbearing postponement.

Below we will explore some possible alternative future fertility behavior options of cohorts that were in the midst of their childbearing early in the 21st century. Before doing so, a more detailed exploration of changes in life-time patterns of childbearing among the cohorts that have completed their childbearing is illuminating and will be helpful as part of the base for exploring the future.

Table 6 shows the differences in CCFRs between cohorts ten (or five) years apart of women in the respective cohorts when they were young, i.e. before their 27th birthday, and when they were in the second half of their reproductive period after their 27th birthday. Each cohort compared to the cohort ten (or five) years younger can experience one out of four different types of changes in their life-time fertility strategy:

1. The CCFR of women when young in the cohort born later is *higher* than in the cohort born earlier and the CCFR *declines* when these women are older. In this case childbearing is being *advanced*.

2. The CCFR of women when young in the cohort born later is *lower* than in the cohort born earlier and the CCFR *increases* when these women are older. In this case childbearing is being *postponed*.

3. CCFRs decline from one cohort to the next when women are young and when they are older.

4. CCFRs increase from one cohort to the next when women are young and when they are older.

The dimensions of postponement of childbearing, for instance, are expressed in percent by the value of the "shift ratio" in the last five columns of Table 6. A shift ratio of 100 means that the decline in fertility when women were young was recuperated in full when they were older. Values below 100 express the actual size of the proportion of the postponed births borne by women of the respective cohort when they were older. The dimensions of advancement are expressed analogously, but the values in percent are in parentheses in Table 6. Fertility declines of women at all ages are designated by a "D" and increases at all ages by an "I."

The results of the calculations in Table 6 show that in the WCs among the cohorts of the 1950s and the early 1960s postponed births were being recuperated. In the cohorts of the 1950s approximately all postponed births were recuperated when women were older in the Nordic Region, in Western Europe, as well as in Switzerland and the United States. In most of the other WCs between 50 to 90 percent of postponed births in the cohorts of the 1950s were born when women were older. In almost all WCs the shift ratios were below 50 percent in the cohorts of the early 1960s and they were considerably smaller than in the 1950s birth cohorts. Recuperation of postponed childbearing had weakened among the cohorts born in 1960-1965. Denmark was the exception.

More detailed examples of changes in the life-time strategies of childbearing in WCs are provided in the top panels of Figure 2. In comparison to the 1950 birth cohort, Danish women born during the 1950s and early 1960s were restricting births while young and bore virtually all the foregone births when older. The propensity to recuperate births in these cohorts was strong. Austrian women of the same birth cohorts also restricted births when young, but only a small proportion of the foregone births were born later in life. Their propensity to recuperate births was weak. The curves of the 1970s birth cohorts demonstrate the continued fertility decline among young women in both countries thus far typical for most WCs (cf. Tables 3 and 4).

In Southern Europe there was no recuperation of postponed births prior to the birth cohorts of the early 1960s. And recuperation was weak even among the cohorts of the 1960s (Table 6).

In the FSCs among the cohorts born during the 1930s through those of the early 1960s births were either being advanced or declining at all ages (Table 6). Exceptionally, some signs of childbearing postponement and partial recuperation appeared in the Balkan Region, in Hungary as well as in the Czech and Slovak Republics among the more recent cohorts.

Examples of changes in life-time childbearing strategies of FSCs are depicted in the bottom panels in Figure 2. In the Czech Republic young women of the 1950s births cohort were having slightly more births than in the base 1950 cohort, however, by the time they reached their late 20s the CCFRs were below the base. There was no propensity to recuperate any foregone births. For instance, the curves of the 1955, 1960 and 1965 cohorts declined below the 1950 base and after a point these were parallel to the baseline. In Romania childbearing of women in the 1950s cohorts up to about age 25 was similar to that of the 1950 birth cohort and when in their late 20s and 30s fertility became relatively lower, essentially commensurate with increasing age. In both countries childbearing of young women in the cohorts of the 1970s is considerably lower than in previous cohorts and declining from one cohort to the next one.

There are initial signs that the birth cohorts of the 1970s in the FSCs are likely to recuperate a proportion of the births that were foregone when these women were young. In all four panels of Figure 3 the age-specific fertility rates (ASFRs) of the 1970 birth cohort were considerably below the previous cohorts up to the late 20s, but at age 30 the ASFR was higher than in the 1965 birth cohort. This is an indication that the cohorts born in the early 1970s when in their 30s are likely to have higher ASFRs than the birth cohorts of the 1960s. The question is: How much higher?

So far (in Table 6 and Figure 2) we have explored how gains or losses (deficits and surpluses) of childbearing during the second part of the reproductive period compare to the gains or losses during the first part of the reproductive period of the same cohorts. It is also useful to analyze trends in the childbearing experience after the 27^{th} birthday in successive cohorts, which is done in Table 7.

In almost all countries there was a considerable decline of fertility among older women in the cohorts born during the 1930s and 1940s. This decline continued among the 1950s birth cohorts and often among cohorts of the early 1960s in most of the FSCs and in Southern Europe. In contrast, in the WCs fertility of older women was increasing in the cohorts of the 1950s and early 1960s compared to previous cohorts. It is important to note that the increase in fertility of older women was never more than about 50 percent between cohorts 10 years apart. In the countries where full childbearing recuperation was the case among the 1950s cohorts, for instance, in the Nordic countries, the decennial increase in childbearing of older women was between 30 and 50 percent. In general, the increases of fertility of older women in the WCs slowed down markedly among the cohorts born in the early 1960s. In the FSCs the declines of fertility of the 1960-1965 cohorts tended to be larger than the declines of the 1950-1960 cohorts. Simultaneously, a turnaround is taking place with childbearing of the older women in the 1960s birth cohorts increasing in several FSCs (Table 7).

Despite ongoing momentous changes in the lifetime childbearing strategies of younger women in the FSCs outlined above, levels of fertility of older women in the 1960s cohorts indicate that these childbearing strategies were still substantially different from those in the WCs. Late childbearing was the rule in the WCs with an average of 1.10 children born after the 27th birthday compared to a lingering pattern of early childbearing with an average of 0.55 children born to older women in the cohorts of the late 1960s in the FSCs, even though there were signs of an incipient increase in fertility of these older women.

The level of fertility at the beginning of the 21st century

Based on the analysis up to this point we come to the conclusion that *fertility in the developed countries has never been as low as it was at the beginning of the 21st century*. This statement is certainly the case for the period since the second world war, and is probably valid also in comparison to the 1920s and 1930s when many countries had low fertility, but sufficient detailed data for that period are not available. In the WCs this is the result of a relatively continuous and steady fertility decline, in the FSCs fertility was stable around the replacement level up to the end of the 1980s and declined rapidly during the 1990s. Furthermore, fertility is continuing to decline in almost all countries.

As this assessment is arrived at by using the tools of cohort fertility analysis any timing effects are eliminated. These conclusions are a composite of the following findings.

1. Completed fertility rates (TCFRs) of cohorts born in the mid- to late 1960s and early 1970s in practically all the low-fertility developed countries were at or below replacement. The average unweighted TCFR for the 1967 birth cohort was 1.8 births per woman (Table 1). This was 30 percent below the average for the 1931 birth cohorts, which were at the peak of their childbearing during the 1950s, and over 10 percent below the average of the 1949 birth cohorts. In a number of countries the latest available TCFRs were under 1.6 births per

woman: Austria (1968 birth cohort), ex-FRG (1964), ex-GDR (1967), Italy (1964), Bulgaria (1972), Romania (1971), and the Russian Federation (1969) (Council of Europe 2004).

2. TCFRs of cohorts born in the mid- to late 1960s were declining in all low-fertility countries (Table 2).

3. At the beginning of the 21st century, cumulated cohort fertility rates (CCFRs) of women born in the early 1970s who were in the *midst* of their childbearing periods (up to their 27th birthday) were in the range of 20 to 80 percent below CCFRs for young women of the early 1940s cohorts. These CCFRs were declining in almost all low-fertility countries. The only exception was the territory of the former Federal Republic of Germany (Table 3).

4. At the beginning of the 21st century, cumulated cohort fertility rates of women born in the late 1970s who were at the *beginning* of their childbearing periods (up to their 22nd birthday) were in the range of 15 to 90 percent below CCFRs for women of the same age in the early 1950s cohorts. These CCFRs were declining in most of the low-fertility countries. There were a few exceptions where childbearing of the very young women might be stabilizing, England & Wales, France, the Netherlands, Portugal, Australia, Japan and New Zealand (Table 4).

5. In the early 21st century life-time fertility strategies in the WCs were characterized by late childbearing, typically 60 percent or more births occurred after the 27th birthday, the peak of childbearing was in the late 20s, successive cohorts were postponing childbearing, and most importantly, usually only a part of the postponed births were being recuperated and the degree of recuperation in the cohorts of the early 1960s was lower than in previous cohorts (Tables 5 and 6; Figures 1 and 2).

6. In the early 21st century life-time fertility strategies in the FSCs were in transition. The cohorts born in the 1960s and around 1970 are still characterized by early childbearing, typically 60 to 80 percent or more births occurred prior to the 27th birthday, the peak of childbearing was in the early 20s, postponement of fertility did not begin until among cohorts born during the mid- to late 1960s and the extent of recuperation as far as it can be assessed was weak (Tables 5 and 6; Figures 1 and 2).

7. At the beginning of the 21st century fertility of older women of the 1960-1965 birth cohorts in WCs was increasing at a lower rate than in preceding cohorts; in the FSCs the decline of childbearing of older women in the 1960-1965 cohorts was even more pronounced than in preceding cohorts; this trend is being reversed in the cohorts of the late 1960s, but childbearing of older women in the FSCs remains at a low level (Table 7).

We shall now proceed to estimate what can realistically be expected regarding the levels and trends of fertility in the foreseeable future.

The basis for short-term fertility projections

We argue that it is possible to provide a reasonably realistic picture about fertility levels and trends in the foreseeable future because some appropriate demographic as well as socio-economic and behavioral knowledge regarding the mechanisms shaping contemporary childbearing is at hand. These materials can be utilized to make relevant calculations, to engage in reflections and reach qualified conclusions. Our reasoning is predicated on the following:

1. Hard data on childbearing of cohorts in the midst of their reproductive periods at the beginning of the 21st century provide a solid base for alternative calculations on how these women might proceed with their childbearing through the end of their reproductive life.

2. The experience with birth postponement and the patterns of birth recuperation in cohorts that have concluded their childbearing in the recent past provide the basis for formulating assumptions for alternative paths of the remaining fertility of cohorts in the midst of their reproductive periods.

3. A number of credible theories regarding principal factors shaping childbearing behavior and trends in Western and in formerly socialist countries at present and in the recent past have been developed (Folbre 1994; Frejka 1980; Hobcraft, 1996 and 2002; Hobcraft, Kiernan 1995; Kohler et al. 2002; Lesthaeghe, Moors 2000; Macura, MacDonald 2003; McDonald 2002; Philipov 2003; Sobotka 2002, 2003b and 2004; van de Kaa 1987). These can be utilized as an additional consideration regarding future fertility behavior of cohorts in the midst or at the outset of their reproductive periods, as well as possibly for those just about to start childbearing.

Alternative calculations projecting childbearing during the second part of the reproductive life of the 1975 birth cohorts yield estimates of possible 1975 TCFRs (Tables 8 and 10). The 1975 TCFR alternative calculations differ from each other by making different assumptions about the extent of fertility recuperation when women will be in the second half of their reproductive period compared to the 1965 birth cohort.

As established above, in virtually all low-income countries fertility of young women prior to their 27th birthday in the 1975 (or latest available) cohort was lower than ever before. Column 4 in Table 8 specifies the fertility deficit of the 1975 CCFR compared to the 1965 CCFR.

The first projection in Table 8, the low alternative (col. 6), assumes that the defined fertility deficit will not be recuperated in the childbearing of the 1975 cohort between the 27th and the 50th birthdays. The second projection assumes that half of the total amount of

the fertility deficit will be recuperated in the childbearing of the 1975 cohort between the 27th and the 50th birthdays (Table 8, last col.). We will also evaluate a third option, namely that the full deficit will be recuperated, in which case the 1975 TCFR would equal the 1965 TCFR.

Evaluation of alternative fertility projections

In attempting to evaluate which of the projections for the 1975 total cohort fertility rates appears most reasonable two overlapping questions need to be considered:

1. Does it make sense to treat the sample of low-fertility countries as a whole?

2. Which extent of fertility recuperation among the elderly women of the 1975 birth cohorts appears most realistic given the known contemporary circumstances and the experiences of the recent past?

The most believable answers would be arrived at if every country were evaluated individually and the results would then be summarized. We argue that such a procedure would be useful and justified, however unnecessarily cumbersome for the purposes of this paper. Quite similar results with only a small risk of error can be gained by evaluating the two major groups of countries, Western and formerly socialist as "wholes," because individual countries in each of these groupings have demonstrated important common features in their fertility behavior over the past half century (Chapter 13 in Frejka, Sardon 2004, pp. 379-381).

The Western countries

In the majority of the WCs fertility recuperation between the 1960 and 1965 cohorts ranged from no recuperation to around 40 - 50 percent (Table 6), and the recuperation rates were as a rule considerably lower than between the 1950 and 1960 birth cohorts. These data imply full fertility recuperation of the 1975 birth cohort is unlikely. At the same time, these data support the assumption that a certain modest amount of recuperation is likely to take place, because it did so between the 1960 and 1965 cohorts, i.e. the "no recuperation" alternative is also unlikely. The elimination of the "no recuperation" and the "full recuperation" alternatives argues for the "50 percent recuperation" alternative as being the most likely of the three projections. One can even go one step further and surmise that the "50 percent recuperation" alternative might be on the high side for the WCs, because in the majority of countries recuperation between the 1960 and 1965 cohorts was between zero and 50 percent.

The comparison of fertility of elderly women between the projected 1975 cohort options and the 1965 cohort provides a different perspective (Table 9). This confirms that the "no recuperation" alternative is unlikely. If this projection were to materialize, childbearing of elderly women would be the same in the 1975 birth cohort as in the 1965 one. This would not be in line with recent experience. Young women in WCs have been postponing some of their births until later in life, and there has been a trend of fertility

increasing among women in their late 20s and 30s (Table 7), i.e. it is not likely that fertility during the second part of the reproductive period in the 1975 cohort would be equal to cohorts ten years their seniors. The analysis in Table 9 is difficult to utilize in assessing which of the other two alternatives is more likely. Based on past experience, the amount of fertility increase among elderly women that would be needed for the "full recuperation" option to materialize does not appear to be outside the range of a reasonable increase in fertility for older women. A weak case can be made that the "full recuperation" option is unlikely, because in virtually all countries the projected 1975 fertility increase of elderly women would be higher than the fertility increase between the 1960 and 1965 cohorts (Cf. last col. in Table 9 with last but one col. in Table 7).

In sum, the "50 percent recuperation" option or even somewhat less than that for the 1975 birth cohort appears as the most likely option for the Western countries.

The formerly socialist countries

The experience with childbearing anticipation, recuperation or lack thereof among the birth cohorts of the 1950s and 1960s (Table 6) does not provide a similar reasonably solid base for guidance regarding the extent of possible recuperation in the 1975 birth cohort in the FSCs, because lifetime childbearing patterns are in a stage of flux and transition among the cohorts of the late 1960s and the 1970s (Figure 3). The birth cohorts of the 1970s and early 1980s are adopting different childbearing strategies compared to the older cohorts, but it is too soon to make any definitive judgments on the "new" patterns. There is no question about the substantial fertility decline occurring among young women in their teens and 20s. It is reasonable to assume that a certain amount of childbearing recuperation, probably a modest one, may take place. That is indicated in Figure 3 by the fact that the tail end of the 1970 cohort curves are above those of the 1965 curves.

In order to approximate the extent of plausible childbearing recuperation to take place in the 1975 birth cohort we turn to Table 9. A strong case can be made that the "full recuperation" projection is very unrealistic or even impossible. According to this projection fertility of elderly women in the 1975 cohort in many of these countries would have to be about twice as large or more compared to the 1965 cohort. Finally, even for the "50 percent recuperation" projection to materialize a considerable fertility increase of these women would be needed. In most cases the required increase would be larger than was experienced by any of the WCs among the birth cohorts of the 1950s (Cf. Table 7). These data appear to render the "full recuperation" projection as exceedingly unrealistic, and it is also difficult to imagine that the "50 percent" projection could be achieved.

In sum, it is reasonable to conclude that the 1975 birth cohorts in the formerly socialist countries are likely to wind up with TCFRs probably above the "no recuperation" projections, and almost certainly below the "50 percent recuperation" projection.

Fertility in the foreseeable future

The above evaluation indicates that it is reasonable to expect the 1975 total cohort fertility rates in the Western countries to be close to or somewhat lower than in the "50 percent recuperation" projection. In the FSCs the 1975 TCFRs are likely to be closer to the "no recuperation" projection than to the "50 percent recuperation" projection.

Overall, the conclusion is reached that fertility in the developed countries is likely to continue to decline (Table 10). The average 1975 TCFR might be between 1.6 and 1.7 births per woman, which would be about 10 percent below the average 1967 TCFR. While this appears to be a moderate decline, in terms of average annual rate of decrease this is about as fast as the descent between the 1931 and the 1949 average TCFR, -1.4 percent per year. On the other hand, if a full recuperation of the 1965 average TCFR were to take place, which appears unrealistic, the average 1975 TCFR would be slightly higher than the 1967 average TCFR.[3]

Even though "projections" have been part of the analysis, these are short-term projections, merely an aid to estimate the level and trends of childbearing in the first decade of the 21st century. It is during this decade that the birth cohorts of the mid-1970s are at the peak of their reproduction and a major part of their childbearing will take place. Much of it actually has already occurred and was included in the childbearing experience of the 1975 birth cohort up to the 27th birthday.

The analysis to this point leads to the following reasonably firm conclusions:

1. Childbearing in the low-fertility developed countries has never been as low as it was at the outset of the 21st century.

2. Fertility in the majority of these countries is likely to continue to decline during the first decade of the 21st century.

3. To expect an appreciable fertility increase in the foreseeable future, i.e. including the second decade of the 21st century, is not realistic or likely, but obviously not impossible.

4. Incipient signs of fertility plateaus or stabilization are becoming apparent in some countries. It also needs to be taken into account that fertility of young women is already so low in some countries that it cannot decline much further.

5. The rate of fertility recuperation among older women appears to be slowing down. In the youngest cohorts for which data were available recuperation was below 50 percent. There were only 5 countries in the study with a recuperation rate of over 50 percent.

Empirical analysis has enabled reasonably reliable estimates of how the cohorts of the early to mid-1970s are likely to conclude their life-time childbearing. Are there tools

[3] Note that the actual 1967 average TCFR is lower than the 1965 average TCFR which in and of itself points to a continuing fertility decline.

that might assist in assessing future fertility behavior of the late 1970s and 1980s birth cohorts?

Although it is known that the late 1970s and early 1980s birth cohorts are starting out with fertility lower than any preceding ones (Table 4 and Figures 1, 2 and 3), major proportions of their life-time fertility is still ahead of them implying that any empirical analysis is not feasible. Conceivably knowledge about the conditions generating contemporary fertility behavior which has been accumulated in theories and hypotheses might be helpful in estimating life-time fertility behavior of women who were in their teens and early 20s at the beginning of the 21st century. For this and for some other reflections we turn to a brief discussion in the next section.

Theoretical considerations

In the first place, most of the knowledge about socio-economic developments and conditions, as summarized in theories of contemporary low fertility, points to the fact that conditions for low fertility are persisting. Young people have few, if any, incentives for their childbearing to be higher than in previous generations.

A number of researchers have outlined theories or theoretical frameworks analyzing the mechanisms that have brought about the relatively low fertility experienced in the developed countries at the turn of the century. In our book (Frejka, Sardon 2004) we relied mainly on the frameworks elaborated by Hobcraft and Kiernan (1995) applicable primarily to western market-economy societies, a second one dealing with the formerly socialist societies by Frejka (1980), and a third one of Kohler, Billari and Ortega (2002) covering both societal systems mostly during the 1990s. Each one of these papers outline in detail the principal factors shaping and modifying childbearing in the respective societies in recent decades.

An additional incisive and insightful paper summarizing theories of low fertility was published by McDonald (2002). He presents four overlapping and mutually complementing theoretical perspectives: rational choice theory, risk aversion theory, post-materialist theory and gender equity theory. The main purpose of his review is to thoroughly understand reasons for low fertility so that countries can devise strategies to increase childbearing if they decide to do so. McDonald explores how fertility decision-making, as outlined by the four theories, fares in the market-based economies of recent decades. It is not possible to do justice to the richness of his analysis in our brief exposition, however, altogether McDonald confirms the supposition that pressures to keep fertility low are powerful. We will quote but one of his many important conclusions, namely that "[T]he market continues to produce risk-averse workers for whom children are a considerable risk" (McDonald 2002, p. 432).

It appears that so far there is no evidence that the socio-economic conditions influencing childbearing of young people in developed low-fertility countries are undergoing any significant changes and it appears reasonable to conclude that childbearing of the late 1970s and early 1980s birth cohorts is likely to be the same or moderately lower

than in preceding generations. In other words, the theoretical analysis confirms that in the foreseeable future fertility is unlikely to increase.

Second, one of the values of the empirical analysis in this paper is that it complements and dovetails the ongoing extensive theoretical discussions on low fertility (Billari, Kohler 2004; Bongaarts 2002; Bongaarts, Feeney 1998; Caldwell, Schindlmayr 2003; Frejka 1980, Hobcraft 1996 and 2004; Hobcraft, Kiernan 1995; Kohler et al. 2002; Lesthaeghe 1983; Lutz et al. 2003; Macura 2004; McDonald 2000 and 2002; Morgan 2003; Sobotka 2004; van de Kaa 1987 and 1994). Our presentation demonstrates the empirical dimensions that are the result of the mechanisms generating low fertility which are the subject of theoretical analyses.

Can policy measures reverse trends of fertility decline in the foreseeable future?

McDonald (2002) devotes a considerable part of his paper to exploring whether, and if so, what kind of actions can be adopted to increase fertility, and who should be involved. On the last issue: "While leadership must inevitably come from government, the ideal arrangement is a partnership between government, employers and families in a whole-of-society approach" (McDonald 2002, p. 433).

With respect to what kind of actions, McDonald lists "three categories of fertility policies …:

1. Financial incentives,
2. Support for parents to combine work and family,
3. Broad social change supportive of children and parenting" (p.433).

The first two categories contain a wide range of measures that have for the most part been implemented in various countries during the past decades, at times even in a rather comprehensive form, for instance, in Czechoslovakia, the German Democratic Republic, Hungary and France (Frejka 1980; Buttner, Lutz 1990; Kamarás, 1996; Bourgeois-Pichat, 1974; Toulemon and de Guibert-Lantoine, 1998). At present some governments (for instance, Austria and Australia) are making similar serious efforts to create more favorable conditions for childbearing, but it is too early to tell what effect such policies are likely to have. Past experience indicates that such efforts tend to be temporary. Increases in period fertility might be achieved, but usually cohort fertility is only marginally affected. Such policies tend to generate fertility anticipation, but not increases in completed cohort fertility. At best they tend to lead to some stabilization. The empirical analysis in this paper attests to that.

The third category (broad social change supportive of children and parenting, for instance, gender equity and child-friendly environments) resembles essentially policies and attitudes that have been promoted in the Nordic countries during the past half century with apparent reasonable success (Hoem, 1990 and 2005; Noack and Østby, 1996). These are the countries with the highest fertility, which is close to replacement; relatively slow fertility decline; and highest rates of childbearing recuperation when women are older. For these measures and attitudes to be implemented, digested and absorbed in other countries is likely

to require a process of long duration, even if all actors -- government, employers and families -- would be "on board."

Concluding reflections

The empirical analysis combined with and backed up by the description of mechanisms generating contemporary low fertility contained in theories and theoretical frameworks confirms the conclusions reached above in the section "*Fertility in the foreseeable future*."

In sum, childbearing of young women in low fertility developed countries was declining and was being recuperated only in part or not at all when they become older. Thus early in the 21st century fertility was lower than ever before and declining. The rate of decline might be slowing down. At best, it looks like a low fertility plateau might be reached in the foreseeable future, i.e. during the first, possibly second decade of the 21st century, with completed cohort fertility rates for individual countries which could be as low as 1.3 or less and probably no higher than 2.0 births per woman (Cf. last two columns in Table 8).

If the above analysis and conclusions are correct, it implies that considerable caution is called for when observing and interpreting recent increases, as well as those of the near future, in total period fertility rates, including adjusted TFRs (for instance, Kohler et al., 2002; Philipov and Kohler, 2001; Schoen, 2004; Sobotka, 2002 and 2004). What appears as an "increase in fertility" is indeed an increase in the period rate, but in many cases it does not have to be an increase in the underlying cohort fertility. Such increases are "real" in the sense that the period fertility rates of a succeeding year or period are higher than in a previous one, because the postponement of cohort fertility slows down or ceases altogether. These fertility increases may be considered illusory in the sense that at the same time cohort childbearing either remains constant or may even decline and to interpret them as an "increase in fertility" may be misleading and raising false expectations.

Note in this context how analyses based on adjusted period total fertility rates and cohort total fertility rates can differ. Sobotka 2004, for instance, concludes that

> "none of the countries analyzed had an adjusted TFR below 1.4. I interpret this finding as an indication that lowest-low fertility in Europe is a result of increasing age at motherhood and, therefore, a temporary phenomenon that will fade once the postponement of fertility stops." (p. 212).

Our analysis indicates total cohort fertility rates in the order of 1.4 or less are feasible and likely and, more importantly, the cohort analysis has shown that thus far fertility decline in most developed countries is still ongoing or at best is reaching a plateau.

Implicit in this paper are crucial questions that need to be confronted by contemporary demography:

- Does the proposed procedure--namely to take total cohort fertility rates (TCFRs) together with cumulated cohort fertility rates (CCFRs) and their recent trends combined with an evaluation of alternative scenarios of their remaining fertility in the foreseeable future based on historical experience and theoretical analysis as a reasonable and credible portrayal and understanding of contemporary

fertility—provide information and insights not revealed by period measures, i.e. does it provide a broader, more comprehensive portrayal of fertility, conceivably corresponding more faithfully to what is happening in the real world than period fertility rates, crude or adjusted?

- Admittedly, the cohort fertility procedure presented here has the drawback that it cannot be expressed in a single measure, comparable to any period total fertility rate. Nevertheless, if it is acknowledged that the cohort fertility procedure provides additional information and insights to the period approach, should it be considered important, or even indispensable, as a complement to period fertility rates, crude or adjusted?

- Finally, if answers to the above questions are positive, should the resulting levels and trends of the cohort fertility rates, including their estimates for the foreseeable future (albeit not totally accurate), be considered a reliable base for informed policy development equally important and relevant as period fertility rates, crude or adjusted?

We acknowledge that the method proposed and executed in this paper is neither simple nor accurate. It is not based on a strict statistical formula and does not provide an exact numerical result with decimal places for the total cohort fertility rates of the youngest cohorts. The TCFRs for these cohorts are estimates based on calculations and theories. Many might consider these procedures problematic, but the evidence presented in this paper provides powerful arguments in support of considering them at least as complements to the period fertility rates.

With respect to substance, to avoid any misunderstanding we wish to emphasize and repeat that our assessments apply only to the foreseeable future, i.e. to the remainder of the first decade and possibly the second decade of the 21st century. And even for that period the assessments are not presented as inevitable, but as the most likely, not necessarily absolutely certain developments.

Appendix: Comparing period and cohort TFRs

In a recent analysis of "lowest-low" fertility in Europe Sobotka (2004) demonstrates that "[F]or the most recent period (in the Netherlands), since the mid-1990s, the adjusted TFR provides a very good estimate of the eventual fertility recovery: the 1995 value of 1.77 was only slightly above the TFR subsequently reached in 2002-02" (Cf. figure 2 in the Sobotka paper [p.209]). He goes on to state:

> "The data reveal clearly, however, that although the adjTFR was closer to the cohort TFR than the (conventional) period TFR during the entire period between the mid-1970s and the mid-1990s, it has often failed to approximate the trends and levels of cohort TFR. Even in its smoothed form, the adjTFR has shown the boom-bust sequence emphasized by van Imhoff and Keilman (2002), which could hardly be interpreted as a result of changes in the underlying quantum of fertility."

Sobotka's observations can be restated and expanded to reveal more conspicuously potential advantages and imperfections of the adjusted TFRs.

1. The adjusted TFRs are an improvement over the period TFRs; they come closer to the cohort TFRs. Moreover,

2. The adjTFRs eventually, i.e. in the case of the Netherlands, in the late 1990s come close to the values of the cohort TFRs and to the period TFRs in 2000-02 after birth postponement has virtually ceased. *However*,

3. Up to the mid-1990s the adjTFRs do not reflect real values and trends of fertility, provided one agrees that the total cohort fertility rates depict such values and trends. For instance,

    a. the smoothed adjTFRs of the mid- to late 1970s were declining rapidly, whereas comparable cohort TFRs were declining at a considerably slower rate;
    b. the smoothed adjTFRs of the early to mid-1980s were increasing while the corresponding cohort TFRs remained virtually unchanged;
    c. the smoothed adjTFRs of the late 1980s were essentially flat while the corresponding cohort TFRs were declining.

In sum, these examples demonstrate the frequent "distortions" inherent in the adjusted TFRs.

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Table 1 – Number of countries in which women born in 1931, 1949 and 1967 experienced specified total fertility rates and average TCFR in those three birth cohorts.

Total cohort fertility rate	Birth cohort		
	1931	**1949**	**1967**
Less than 1.60	-	-	4
1.60 - 1.79	-	1	11
1.80 - 1.99	-	15	11
2.00 - 2.19	9	10	4
2.20 - 2.39	5	5	1
2.40 - 2.59	3	3	-
2.60 and above	11	-	-
Total number of countries	**28**	**34**	**31**
Average TCFR (unweighted)	**2.58**	**2.04**	**1.83**

Table 2 – Total cohort fertility rates, 36 low fertility countries, birth cohorts 1930, 1940, 1950, 1960 and the latest available (1960s or early 1970s)

Country	Total cohort fertility rates of cohort born in						Annual change between birth cohorts (percent)				
	1930	1940	1950	1960	1965	Latest available	1930-1940	1940-1950	1950-1960	1960-1965	1965-latest
Nordic Region											
Denmark	2.356	2.243	1.901	1.898	1.919	1.909[e]	-0.5	-1.7	0.0	0.2	-0.3
Finland	2.461	2.038	1.857	1.957	1.908	1.875[e]	-1.9	-0.9	0.5	-0.5	-0.9
Norway	2.483	2.450	2.095	2.091	2.077	2.062[f]	-0.1	-1.6	0.0	-0.1	-0.2
Sweden	2.122	2.047	2.003	2.042	1.987	1.952[e]	-0.4	-0.2	0.2	-0.6	-0.9
Western Europe											
Belgium	2.289	2.157	1.831	1.852	…	1.804[a]	-0.6	-1.6	0.1	…	-0.9 [k]
England & Wales	2.342	2.348	2.057	1.968	1.882	1.863[e]	0.0	-1.3	-0.4	-0.9	-0.5
France	2.628	2.411	2.109	2.111	2.018	1.989[e]	-0.9	-1.3	0.0	-0.9	-0.7
Netherlands	2.678	2.221	1.889	1.851	1.777	1.754[e]	-1.9	-1.6	-0.2	-0.8	-0.7
West Central Europe											
Austria	2.323	2.125	1.869	1.696	1.632	1.561[f]	-0.9	-1.3	-1.0	-0.8	-1.5
Former FRG	2.149	1.967	1.693	1.594	…	1.505[b]	-0.9	-1.5	-0.6	…	-1.4 [l]
Former GDR	…	1.982	1.791	1.795	1.562	1.451[e]	...	-1.0	0.0	-2.8	-3.7
Switzerland	2.181	2.082	1.793	1.775	1.654	1.617[e]	-0.5	-1.5	-0.1	-1.4	-1.2
Southern Europe											
Greece	…	2.095	2.020	1.923	1.747	1.652[f]	...	-0.4	-0.5	-1.9	-1.9
Italy	2.260	2.115	1.860	1.600	…	1.388[b]	-0.7	-1.3	-1.5	…	-3.6 [l]
Portugal	2.942	2.666	2.077	1.892	1.817	1.741[f]	-1.0	-2.5	-0.9	-0.8	-1.4
Spain	2.644	2.548	2.136	1.755	…	1.631[b]	-0.4	-1.8	-2.0	…	-1.8
East Central Europe											
Czech Republic	2.138	2.064	2.095	2.027	1.931	1.736[i]	-0.4	0.2	-0.3	-1.0	-1.8
Hungary	2.075	1.921	1.951	2.018	1.970	1.803[h]	-0.8	0.2	0.3	-0.5	-1.5
Poland	…	…	2.181	2.175	1.999	1.784[h]	…	…	0.0	-1.7	-2.3
Slovak Republic	2.868	2.551	2.307	2.176	2.036	1.797[i]	-1.2	-1.0	-0.6	-1.3	-2.1
Eastern Europe											
Bulgaria	2.115	2.083	2.067	1.953	1.832	1.518[j]	-0.2	-0.1	-0.6	-1.3	-2.7
Romania	…	2.420	2.426	2.120	1.909	1.589[i]	…	0.0	-1.3	-2.1	-3.1
Russia	…	1.946	1.884	1.829	1.658	1.540[g]	…	-0.3	-0.3	-2.0	-1.8
Balkan Region											
Bosnia & Herzegovina	3.591	2.747	2.171	…	…	…	-2.7	-2.4	…	…	…
Croatia	2.153	1.959	1.864	1.978	1.879	1.791[e]	-0.9	-0.5	0.6	-1.0	-2.4
Macedonia	3.737	3.059	2.347	2.293	2.203	2.117[i]	-2.0	-2.6	-0.2	-0.8	-0.7
Slovenia	2.100	2.009	1.897	1.873	1.760	1.649[g]	-0.4	-0.6	-0.1	-1.2	-1.6
Yugoslavia	2.488	2.390	2.280	2.278	2.127	1.904[h]	-0.4	-0.5	0.0	-1.4	-2.2
Baltic Region											
Estonia	…	…	1.973	2.024	1.868	1.742[g]	…	…	0.3	-1.6	-1.7
Latvia	…	…	1.870	1.948	1.769	1.623[h]	…	…	0.4	-1.9	-1.7
Lithuania	…	1.990	2.009	1.887	1.726	1.644[i]	…	0.1	-0.6	-1.8	-0.8
Non European Countries											
Australia	3.073	2.810	2.347	2.177	2.057	2.012[e]	-0.9	-1.8	-0.8	-1.1	-1.1
Canada	3.284	2.600	1.889	1.801	1.720	1.711[e]	-2.3	-3.2	-0.5	-0.9	-0.3
Japan	2.087	1.972	2.053	1.828	1.603	1.467[f]	-0.6	0.4	-1.2	-2.6	-3.0
New Zealand	3.629	3.100	2.553	2.376	2.245	2.231[e]	-1.6	-1.9	-0.7	-1.1	-0.3
United States	3.178	2.729	2.028	1.999	1.947	1.806[g]	-1.5	-3.0	-0.1	-0.5	-1.9

Notes : a=1963, b=1964, c=1965, d=1966, e=1967, f=1968, g=1969, h=1970, i=1971, j=1972;
k =1960 -1963, l = 1960 – 1964

Table 3 – Cumulated cohort fertility rates (CCFRs) up to 27th birthday, 36 low fertility countries, birth cohorts 1930, 1940, 1950, 1960, 1970 and 1975 (or latest available)

Country	CCFR up to 27th Birthday							Annual change between birth cohorts (percent)					
	1930	1940	1950	1960	1965	1970	1975 or latest available	1930-1940	1940-1950	1950-1960	1960-1965	1965-1970	1970-1975 (or latest available)
Nordic Region													
Denmark	1.317	1.451	1.158	0.776	0.680	0.613	0.521	1.0	-2.3	-4.0	-2.6	-2.1	-3.3
Finland	1.264	1.257	0.957	0.778	0.683	0.645	0.566	-0.1	-2.7	-2.1	-2.6	-1.1	-2.6
Norway	1.128	1.487	1.279	0.921	0.850	0.758	0.629	2.8	-1.5	-3.3	-1.6	-2.3	-3.7
Sweden	1.101	1.208	1.068	0.797	0.805	0.689	0.483	0.9	-1.2	-2.9	0.2	-3.1	-7.1
Western Europe													
Belgium	...	1.297	1.120	0.931	0.770	0.646	...	...	-1.5	-1.8	-3.8	-3.5	...
England & Wales	1.100	1.452	1.170	0.921	0.824	0.766	0.686	2.8	-2.2	-2.4	-2.2	-1.5	-2.2
France	1.363	1.443	1.243	1.036	0.835	0.669	0.597	0.6	-1.5	-1.8	-4.3	-4.4	-2.3
Netherlands	0.944	1.176	0.991	0.629	0.497	0.397	0.392	2.2	-1.7	-4.5	-4.7	-4.5	-0.3
West Central Europe													
Austria	...	1.326	1.234	0.967	0.837	0.732	0.631	...	-0.7	-2.4	-2.9	-2.7	-3.0
Former FRG	1.001	1.199	0.993	0.717	0.573	0.523	0.537[a]	1.8	-1.9	-3.3	-4.5	-1.8	1.3
Former GDR	...	1.417	1.312	1.384	1.156	0.714	0.628[a]	...	-0.8	0.5	-3.6	-9.6	-6.4
Switzerland	0.881	1.167	0.926	0.689	0.559	0.479	0.425	2.8	-2.3	-3.0	-4.2	-3.1	-2.4
Southern Europe													
Greece	...	0.975	1.218	1.200	0.932	0.650	0.491	...	2.2	-0.1	-5.1	-7.2	-5.6
Italy	...	1.018	1.041	0.768	0.558	0.414	0.236[b]	...	0.2	-3.0	-6.4	-6.0	-18.7
Portugal	1.163	1.273	1.183	1.087	0.909	0.707	0.587	0.9	-0.7	-0.8	-3.6	-5.0	-3.7
Spain	0.845	1.002	1.110	0.814	0.581	0.374	0.282[b]	1.7	1.0	-3.1	-6.7	-8.8	-9.4
East Central Europe													
Czech Republic	1.465	1.477	1.535	1.510	1.418	1.201	0.788	0.1	0.4	-0.2	-1.3	-3.3	-8.4
Hungary	1.427	1.266	1.399	1.376	1.305	1.102	0.759	-1.2	1.0	-0.2	-1.1	-3.4	-7.5
Poland	...	...	...	1.404	1.300	1.137	0.812	...	...	...	-1.5	-2.7	-6.7
Slovak Republic	1.710	1.705	1.591	1.565	1.478	1.286	0.917	0.0	-0.7	-0.2	-1.1	-2.8	-6.8
Eastern Europe													
Bulgaria	1.460	1.507	1.602	1.560	1.491	1.205	0.924	0.3	0.6	-0.3	-0.9	-4.3	-5.3
Romania	...	1.323	1.685	1.560	1.477	1.107	0.886	...	2.4	-0.8	-1.1	-5.8	-4.5
Russia	...	1.150	1.175	1.291	1.250	1.083	0.941[c]	...	0.2	0.9	-0.7	-2.9	-3.5
Balkan Region													
Bosnia & Herzegovina	1.779	1.616	1.428	1.209	...	...	...	-1.0	-1.2	-1.7	...	...	...
Croatia	1.309	1.273	1.236	1.291	1.138	0.897	0.790[c]	-0.3	-0.3	0.4	-2.5	-4.8	-3.2
Macedonia	1.912	1.782	1.496	1.525	1.418	1.354	1.204	-0.7	-1.7	0.2	-1.5	-0.9	-2.3
Slovenia	1.068	1.183	1.270	1.316	1.130	0.868	0.617	1.0	0.7	0.4	-3.1	-5.3	-6.8
Yugoslavia	1.551	1.493	1.457	1.430	1.323	1.167	0.966	-0.4	-0.2	-0.2	-1.6	-2.5	-3.8
Baltic Region													
Estonia	...	...	1.235	1.390	1.327	1.050	0.836	...	...	1.2	-0.9	-4.7	-4.6
Latvia	...	...	1.144	1.318	1.255	1.054	0.790	...	...	1.4	-1.0	-3.5	-5.8
Lithuania	...	0.968	1.196	1.224	1.147	1.114	0.955	...	2.1	0.2	-1.3	-0.6	-3.1
Non European Countries													
Australia	1.553	1.701	1.362	0.937	0.783	0.661	0.632	0.9	-2.2	-3.7	-3.6	-3.4	-0.9
Canada	1.667	1.748	1.062	0.817	0.720	0.682	0.626	0.5	-5.0	-2.6	-2.5	-1.1	-1.7
Japan	1.100	0.919	1.002	0.684	0.517	0.414	0.372	-1.8	0.9	-3.8	-5.6	-4.4	-2.2
New Zealand	1.809	1.977	1.621	1.086	0.948	0.833	0.738	0.9	-2.0	-4.0	-2.7	-2.6	-2.4
United States	1.877	1.946	1.224	1.062	1.059	1.067	0.997	0.4	-4.6	-1.4	-0.1	0.1	-1.4

Notes : a=1972, b=1973, c=1974

Table 4 – Cumulated cohort fertility rates (CCFRs) up to 22th birthday, 36 low fertility countries, birth cohorts 1930, 1940, 1950, 1960, 1970, 1975 and 1980 (or latest available).

Country	CCFR up to 22nd birthday							Annual change between birth cohorts (percent)					
	1930	1940	1950	1960	1970	1975	1980 or latest available	1930-1940	1940-1950	1950-1960	1960-1970	1970-1975	1975-1980 (or latest available)
Nordic Region													
Denmark	0.455	0.525	0.407	0.235	0.134	0.121	0.105	1.4	-2.5	-5.5	-5.6	-2.1	-2.9
Finland	0.381	0.420	0.362	0.241	0.161	0.143	0.132	1.0	-1.5	-4.1	-4.0	-2.3	-1.6
Norway	0.309	0.504	0.515	0.315	0.223	0.174	0.151	4.9	0.2	-4.9	-3.5	-4.9	-2.9
Sweden	0.402	0.416	0.392	0.227	0.190	0.123	0.098	0.3	-0.6	-5.5	-1.8	-8.6	-4.6
Western Europe													
Belgium	...	0.374	0.400	0.277	0.150	0.133	...	...	0.7	-3.7	-6.1	-2.4	...
England & Wales	0.310	0.452	0.497	0.330	0.302	0.283	0.279	3.8	0.9	-4.1	-0.9	-1.3	-0.2
France	0.442	0.441	0.469	0.327	0.167	0.131	0.138	0.0	0.6	-3.6	-6.7	-4.8	1.1
Netherlands	...	0.241	0.282	0.131	0.091	0.082	0.087	...	1.5	-7.7	-3.6	-2.2	1.3
West Central Europe													
Austria	...	0.499	0.608	0.399	0.239	0.215	0.165	...	2.0	-4.2	-5.1	-2.2	-5.3
Former FRG	...	0.368	0.451	0.243	0.158	0.168	0.159[a]	...	2.0	-6.2	-4.3	1.1	-2.7
Former GDR	...	0.578	0.677	0.625	0.338	0.149	0.138[a]	...	1.6	-0.8	-6.1	-16.5	-3.5
Switzerland	0.197	0.274	0.301	0.159	0.102	0.093	0.086	3.3	0.9	-6.4	-4.5	-1.8	-1.6
Southern Europe													
Greece	...	...	0.412	0.543	0.247	0.158	0.120	...	...	2.8	-7.9	-8.9	-5.6
Italy	...	0.243	0.319	0.273	0.112	0.079	0.042[b]	...	2.7	-1.6	-8.9	-7.0	-21.3
Portugal	0.332	0.371	0.372	0.470	0.269	0.194	0.197	1.1	0.0	2.3	-5.6	-6.5	0.3
Spain	0.122	0.172	0.209	0.286	0.134	0.080	0.076[b]	3.4	2.0	3.2	-7.6	-10.4	-1.7
East Central Europe													
Czech Republic	0.559	0.620	0.596	0.701	0.599	0.324	0.162	1.0	-0.4	1.6	-1.6	-12.3	-13.9
Hungary	0.547	0.584	0.593	0.663	0.481	0.320	0.227	0.6	0.2	1.1	-3.2	-8.1	-6.9
Poland	...	...	...	0.475	0.452	0.313	0.206	...	...	...	-0.5	-7.3	-8.4
Slovak Republic	0.603	0.697	0.579	0.644	0.615	0.417	0.248	1.4	-1.9	1.1	-0.5	-7.8	-10.4
Eastern Europe													
Bulgaria	0.619	0.731	0.752	0.815	0.703	0.492	0.408	1.7	0.3	0.8	-1.5	-7.1	-3.8
Romania	...	0.584	0.758	0.708	0.564	0.424	0.351	...	2.6	-0.7	-2.3	-5.7	-3.8
Russia	...	0.398	0.455	0.525	0.590	0.470	0.386[b]	...	1.4	1.4	1.2	-4.5	-6.6
Balkan Region													
Bosnia & Herzegovina	...	0.558	0.607	0.472	...	...	...	...	0.8	-2.5	...	...	...
Croatia	...	0.498	0.544	0.546	0.353	0.269	0.232[b]	...	0.9	0.0	-4.4	-5.4	-5.0
Macedonia	...	0.532	0.539	0.587	0.516	0.490	0.357	...	0.1	0.8	-1.3	-1.0	-6.3
Slovenia	...	0.373	0.525	0.629	0.335	0.193	0.107	...	3.4	1.8	-6.3	-11.1	-11.8
Yugoslavia	...	0.619	0.655	0.590	0.485	0.385	0.297	...	0.6	-1.0	-2.0	-4.6	-5.2
Baltic Region													
Estonia	...	...	...	0.558	0.530	0.392	0.284	...	...	...	-0.5	-6.0	-6.5
Latvia	...	...	...	0.508	0.548	0.360	0.236	...	...	...	0.8	-8.4	-8.4
Lithuania	...	...	0.399	0.409	0.498	0.431	0.301	...	...	0.3	2.0	-2.9	-7.2
Non European Countries													
Australia	0.452	0.591	0.530	0.306	0.214	0.201	0.202	2.7	-1.1	-5.5	-3.5	-1.3	0.1
Canada	0.530	0.703	0.418	0.281	0.237	0.238	0.186	2.8	-5.2	-4.0	-1.7	0.1	-4.9
Japan	0.251	0.105	0.110	0.078	0.066	0.064	0.077	-8.7	0.5	-3.5	-1.7	-0.6	3.6
New Zealand	0.485	0.669	0.684	0.417	0.327	0.294	0.290	3.2	0.2	-4.9	-2.5	-2.1	-0.3
United States	0.771	0.944	0.616	0.493	0.507	0.531	0.388	2.0	-4.3	-2.2	0.3	0.9	-6.3

Notes: a=1977, b=1978, c=1979

Table 5 – The proportion of total cohort fertility completed by 27th birthday, 36 low fertility countries, birth cohorts 1930, 1940, 1950, 1960, 1965 and 1970.

Country	Proportion of TCFR completed up to 27th birthday of cohort born in						Annual change between birth cohorts (percent)				
	1930	1940	1950	1960	1965	1970	1930-1940	1940-1950	1950-1960	1960-1965	1965-1970
Nordic Region											
Denmark	55.9	64.7	60.9	40.9	35.4	...	1.5	-0.6	-4.0	-2.9	...
Finland	51.4	61.7	51.5	39.8	35.8	...	1.8	-1.8	-2.6	-2.1	...
Norway	45.4	60.7	61.1	44.0	40.8	...	2.9	0.1	-3.3	-1.5	...
Sweden	51.9	59.0	53.3	39.0	40.5	...	1.3	-1.0	-3.1	0.8	...
Western Europe											
Belgium	...	60.2	61.2	50.3	...	...	...	0.2	-2.0	...	...
England & Wales	47.0	61.8	56.9	46.8	43.5	...	2.7	-0.8	-2.0	-1.5	...
France	51.9	59.8	58.9	49.1	41.4	...	1.4	-0.2	-1.8	-3.4	...
Netherlands	35.3	53.0	52.5	34.0	28.0	...	4.1	-0.1	-4.3	-3.9	...
West Central Europe											
Austria	...	62.4	66.0	57.0	51.3	...	...	0.6	-1.5	-2.1	...
Former FRG	46.6	60.9	58.7	45.0	...	...	2.7	-0.4	-2.7	...	...
Former GDR	...	71.5	73.3	77.1	74.0	...	...	0.2	0.5	-0.8	...
Switzerland	40.4	56.0	51.7	38.8	33.8	...	3.3	-0.8	-2.8	-2.8	...
Southern Europe											
Greece	...	46.5	60.3	62.4	53.3	...	...	2.6	0.3	-3.1	...
Italy	...	48.2	56.0	48.0	...	...	...	1.5	-1.5	...	...
Portugal	39.5	47.7	56.9	57.4	50.0	...	1.9	1.8	0.1	-2.8	...
Spain	31.9	39.3	51.9	46.4	...	...	2.1	2.8	-1.1	...	...
East Central Europe											
Czech Republic	68.5	71.5	73.3	74.5	73.4	67.1	0.4	0.2	0.2	-0.3	-1.8
Hungary	68.8	65.9	71.7	68.2	66.3	61.1	-0.4	0.8	-0.5	-0.6	-1.6
Poland	...	...	...	64.6	65.1	63.7	...	...	...	0.2	-0.4
Slovak Republic	59.6	66.9	69.0	71.9	72.6	69.2	1.1	0.3	0.4	0.2	-1.0
Eastern Europe											
Bulgaria	69.0	72.3	77.5	79.9	81.4	75.1	0.5	0.7	0.3	0.4	-1.6
Romania	...	54.7	69.5	73.6	77.4	69.0	...	2.4	0.6	1.0	-2.3
Russia	...	59.1	62.4	70.6	75.4	...	...	0.5	1.2	1.3	...
Balkan Region											
Bosnia & Herzegovina	49.6	58.8	65.8	...	...	...	1.7	1.1	...	...	...
Croatia	60.8	65.0	66.3	65.2	60.6	...	0.7	0.2	-0.2	-1.5	...
Macedonia	51.2	58.3	63.7	66.5	64.4	63.7	1.3	0.9	0.4	-0.6	...
Slovenia	50.9	58.9	67.0	70.3	64.2	...	1.5	1.3	0.5	-1.8	...
Yugoslavia	62.3	62.5	63.9	62.8	62.2	61.3	0.0	0.2	-0.2	-0.2	-0.3
Baltic Region											
Estonia	...	...	62.6	68.7	71.0	...	...	...	0.9	0.7	...
Latvia	...	...	61.2	67.7	70.9	64.9	...	...	1.0	0.9	-1.8
Lithuania	...	48.6	59.5	64.9	66.5	65.9	...	2.0	0.9	0.5	-0.2
Non European Countries											
Australia	50.6	60.6	58.1	43.1	38.0	...	1.8	-0.4	-3.0	-2.5	...
Canada	50.8	67.2	56.2	45.4	41.9	...	2.8	-1.8	-2.1	-1.6	...
Japan	52.4	46.1	50.6	37.5	32.0	...	-1.3	0.9	-3.0	-3.2	...
New Zealand	49.8	63.8	63.5	45.7	42.2	...	2.5	0.0	-3.3	-1.6	...
United States	59.1	71.3	60.3	53.1	54.4	...	1.9	-1.7	-1.3	0.5	...

Table 6 – Differences in cumulated cohort fertility rates (CCFR) between successive cohorts and shift ratios, up to and after 27th birthday, 36 low fertility countries, birth cohorts 1930, 1940, 1950, 1960, 1965 and 1970.

Country	Differences in CCFR up to 27th birthday of successive cohorts					Differences in CCFR after 27th birthday of successive cohorts					Shift ratios[1](advancement in parentheses; postponement without)				
	1930-1940	1940-1950	1950-1960	1960-1965	1965-1970	1930-1940	1940-1950	1950-1960	1960-1965	1965-1970	1930-1940	1940-1950	1950-1960	1960-1965	1965-1970
Nordic Region															
Denmark	0.134	-0.293	-0.382	-0.096	-0.067	-0.247	-0.049	0.379	0.117	...	(54)	D	99	122	...
Finland	-0.007	-0.301	-0.179	-0.095	-0.037	-0.416	0.120	0.279	0.047	...	D	40	156	49	...
Norway	0.359	-0.208	-0.359	-0.070	-0.092	-0.392	-0.148	0.356	0.063	...	(92)	D	99	89	...
Sweden	0.107	-0.140	-0.271	0.008	-0.116	-0.182	0.095	0.310	-0.064	...	(59)	68	115	(13)	...
Western Europe															
Belgium	...	-0.177	-0.189	-0.161	-0.124	...	-0.149	0.210	...	...	...	D	111	...	...
England & Wales	0.351	-0.281	-0.249	-0.097	-0.059	-0.346	-0.009	0.160	0.023	...	(102)	D	64	24	...
France	0.080	-0.200	-0.206	-0.201	-0.166	-0.297	-0.102	0.208	0.108	...	(27)	D	101	54	...
Netherlands	0.232	-0.185	-0.362	-0.132	-0.100	-0.689	-0.147	0.324	0.058	...	(34)	D	90	44	...
West Central Europe															
Austria	...	-0.091	-0.268	-0.129	-0.105	...	-0.164	0.094	0.066	...	...	D	35	51	...
Former FRG	0.197	-0.206	-0.276	-0.144	-0.049	-0.379	-0.068	0.177	...	...	(52)	D	64	...	...
Former GDR	...	-0.104	0.072	-0.228	-0.442	...	-0.087	-0.068	-0.005	...	...	D	(106)	D	...
Switzerland	0.286	-0.241	-0.237	-0.131	-0.080	-0.385	-0.048	0.218	0.010	...	(74)	D	92	8	...
Southern Europe															
Greece	...	0.243	-0.018	-0.268	-0.281	...	-0.318	-0.079	0.093	...	...	(76)	D	35	...
Italy	...	0.023	-0.273	-0.210	-0.144	...	-0.278	0.013	...	...	...	(8)	5	...	...
Portugal	0.109	-0.090	-0.095	-0.178	-0.201	-0.386	-0.498	-0.089	0.103	...	(28)	D	D	58	...
Spain	0.157	0.108	-0.296	-0.233	-0.207	-0.253	-0.519	-0.085	...	...	(62)	(21)	D	...	...
East Central Europe															
Czech Republic	0.012	0.058	-0.025	-0.093	-0.217	-0.086	-0.027	-0.043	-0.004	0.075	(14)	(216)	D	D	34
Hungary	-0.161	0.134	-0.023	-0.071	-0.203	0.007	-0.104	0.091	0.023	0.036	4	(129)	392	32	18
Poland	...	...	...	-0.104	-0.163	...	...	...	-0.073	-0.051	...	...	...	D	D
Slovak Republic	-0.005	-0.114	-0.026	-0.087	-0.192	-0.312	-0.130	-0.104	-0.054	0.015	D	D	D	D	8
Eastern Europe															
Bulgaria	0.046	0.095	-0.042	-0.069	-0.286	-0.078	-0.112	-0.072	-0.052	0.058	(59)	(85)	D	D	20
Romania	...	0.362	-0.126	-0.082	-0.370	...	-0.355	-0.180	-0.130	0.065	...	(102)	D	D	18
Russia	...	0.025	0.116	-0.041	-0.167	...	-0.088	-0.170	-0.130	...	...	(29)	(68)	D	...
Balkan Region															
Bosnia & H.	-0.163	-0.188	-0.219	...	...	-0.680	-0.389	...	...	...	D	D	...	...	...
Croatia	-0.035	-0.038	0.055	-0.152	-0.242	-0.158	-0.058	0.059	0.052	...	D	D	I	35	...
Macedonia	-0.130	-0.286	0.029	-0.107	-0.065	-0.548	-0.426	-0.083	0.016	-0.014	D	D	(35)	15	D
Slovenia	0.115	0.087	0.046	-0.187	-0.262	-0.205	-0.199	-0.070	0.074	...	(56)	(44)	(67)	39	...
Yugoslavia	-0.058	-0.036	-0.027	-0.108	-0.156	-0.040	-0.074	0.025	-0.044	-0.067	D	D	93	D	D
Baltic Region															
Estonia	...	...	0.156	-0.063	-0.277	...	...	-0.105	-0.092	...	...	...	(149)	D	...
Latvia	...	...	0.174	-0.063	-0.201	...	...	-0.096	-0.115	0.055	...	...	(181)	D	27
Lithuania	...	0.228	0.029	-0.077	-0.033	...	-0.210	-0.150	-0.085	-0.001	...	(109)	(19)	D	D
Non European															
Australia	0.148	-0.339	-0.425	-0.154	-0.122	-0.411	-0.124	0.255	0.035	...	(36)	D	60	23	...
Canada	0.081	-0.686	-0.245	-0.097	-0.038	-0.766	-0.024	0.156	0.017	...	(11)	D	64	17	...
Japan	-0.180	0.082	-0.318	-0.168	-0.102	0.077	-0.098	0.160	-0.040	...	43	(84)	51	D	...
New Zealand	0.169	-0.356	-0.535	-0.138	-0.115	-0.698	-0.190	0.358	-0.007	...	(24)	D	66	5	...
United States	0.069	-0.722	-0.162	-0.003	0.008	-0.518	0.021	0.134	-0.050	...	(13)	3	82	D	...

Table 7 – Childbearing (cumulated cohort fertility rate, CCFR) after 27th birthday, 36 low fertility countries, birth cohorts 1930, 1940, 1950, 1960, 1965 and 1970.

Country	Cumulated fertility after 27th birthday						Decennial change between cohorts (percent)				
	1930	1940	1950	1960	1965	1970	1930-1940	1940-1950	1950-1960	1960-1965[a]	1965-1970[a]
Nordic Region											
Denmark	1.040	0.793	0.743	1.122	1.239	...	-24	-6	51	21	...
Finland	1.197	0.781	0.900	1.179	1.225	...	-35	15	31	8	...
Norway	1.355	0.963	0.815	1.171	1.234	...	-29	-15	44	11	...
Sweden	1.021	0.840	0.935	1.245	1.181	...	-18	11	33	-10	...
Western Europe											
Belgium	...	0.859	0.710	0.921	...	...	...	-17	30	...	...
England & Wales	1.242	0.896	0.887	1.047	1.070	...	-28	-1	18	4	...
France	1.265	0.968	0.867	1.075	1.183	...	-24	-11	24	20	...
Netherlands	1.733	1.045	0.898	1.222	1.280	…	-40	-14	36	10	...
West Central Europe											
Austria	...	0.799	0.635	0.729	0.795	...	...	-21	15	18	...
Former FRG	1.148	0.768	0.700	0.877	...	...	-33	-9	25	...	...
Former GDR	...	0.565	0.479	0.411	0.405	...	...	-15	-14	-3	...
Switzerland	1.300	0.915	0.867	1.085	1.096	...	-30	-5	25	2	...
Southern Europe											
Greece	...	1.120	0.802	0.723	0.816	...	...	-28	-10	26	...
Italy	...	1.097	0.819	0.832	...	...	...	-25	2	...	...
Portugal	1.779	1.393	0.895	0.805	0.908	...	-22	-36	-10	26	...
Spain	1.799	1.546	1.027	0.942	...	...	-14	-34	-8	...	...
East Central Europe											
Czech Republic	0.673	0.587	0.560	0.517	0.513	0.588	-13	-5	-8	-2	29
Hungary	0.648	0.655	0.551	0.642	0.665	0.701	1	-16	17	7	11
Poland	...	...	...	0.771	0.698	0.647	...	...	...	-19	-15
Slovak Republic	1.158	0.846	0.715	0.611	0.558	0.573	-27	-15	-15	-18	5
Eastern Europe											
Bulgaria	0.655	0.577	0.465	0.393	0.341	0.400	-12	-19	-15	-26	34
Romania	...	1.096	0.741	0.561	0.431	0.496	...	-32	-24	-46	30
Russia	...	0.796	0.708	0.538	0.408	...	...	-11	-24	-48	...
Balkan Region											
Bosnia & Herzegovina	1.811	1.131	0.742	...	...	...	-38	-34	...	...	...
Croatia	0.844	0.686	0.628	0.688	0.740	...	-19	-8	10	15	...
Macedonia	1.825	1.277	0.851	0.768	0.784	0.770	-30	-33	-10	4	-4
Slovenia	1.031	0.826	0.627	0.557	0.631	...	-20	-24	-11	26	...
Yugoslavia	0.937	0.897	0.823	0.848	0.804	0.737	-4	-8	3	-10	-17
Baltic Region											
Estonia	...	...	0.738	0.634	0.542	...	...	...	-14	-29	...
Latvia	...	...	0.726	0.630	0.514	0.569	...	...	-13	-37	21
Lithuania	...	1.023	0.813	0.663	0.578	0.578	...	-21	-19	-26	0
Non European Countries											
Australia	1.519	1.108	0.984	1.240	1.275	...	-27	-11	26	6	...
Canada	1.617	0.852	0.827	0.983	1.000	...	-47	-3	19	3	...
Japan	0.999	1.076	0.978	1.138	1.099	...	8	-9	16	-7	...
New Zealand	1.820	1.122	0.932	1.290	1.298	...	-38	-17	38	1	...
United States	1.301	0.783	0.804	0.938	0.888	...	-40	3	17	-11	...

Note: [a] = Adjusted for decennium

Table 8 – Projected alternative 1975 total cohort fertility rates, 36 low fertility countries.

Country	Estimated TCFR of 1965 cohort	1965 CCFR up to 27th birthday	1975 or latest CCFR up to 27th birthday	Difference between 1975 (or latest) and 1965 CCFR up to 27th birthday	50% of the difference between 1975 (or latest) and 1965 CCFR up to 27th birthday	1975 or latest TCFR assuming no recuperation	1975 or latest TCFR assuming 50% recuperation
Nordic Region							
Denmark	1.919	0.680	0.521	-0.159	-0.079	1.760	1.840
Finland	1.908	0.683	0.566	-0.117	-0.059	1.791	1.850
Norway	2.084	0.850	0.629	-0.221	-0.110	1.863	1.973
Sweden	1.987	0.805	0.483	-0.322	-0.161	1.665	1.826
Western Europe							
Belgium	...	0.770	…	...	...	...	...
England & Wales	1.882	0.824	0.686	-0.138	-0.069	1.744	1.813
France	2.018	0.835	0.597	-0.238	-0.119	1.781	1.900
Netherlands	1.777	0.497	0.392	-0.105	-0.053	1.672	1.724
West Central Europe							
Austria	1.632	0.837	0.631	-0.207	-0.103	1.426	1.529
Former FRG	…	0.573	0.537[a]	-0.035	-0.018	...	...
Former GDR	1.562	1.156	0.628[a]	-0.528	-0.264	1.033	1.297
Switzerland	1.654	0.559	0.425	-0.133	-0.067	1.521	1.588
Southern Europe							
Greece	1.747	0.932	0.491	-0.441	-0.221	1.306	1.527
Italy	…	0.558	0.236[b]	-0.322	-0.161	...	...
Portugal	1.817	0.909	0.587	-0.322	-0.161	1.495	1.656
Spain	…	0.581	0.282[a]	-0.299	-0.149	...	...
East Central Europe							
Czech Republic	1.931	1.418	0.788	-0.630	-0.315	1.301	1.616
Hungary	1.970	1.305	0.759	-0.546	-0.273	1.424	1.697
Poland	1.999	1.300	0.812	-0.489	-0.244	1.510	1.754
Slovak Republic	2.036	1.478	0.917	-0.562	-0.281	1.475	1.755
Eastern Europe							
Bulgaria	1.832	1.491	0.924	-0.567	-0.283	1.265	1.549
Romania	1.909	1.477	0.886	-0.592	-0.296	1.317	1.613
Russia	1.658	1.250	0.941[c]	-0.308	-0.154	1.349	1.503
West Balkan Region							
Bosnia & Herzegovina		...	...	...	...	...	...
Croatia	1.879	1.138	0.790[c]	-0.349	-0.174	1.530	1.704
Macedonia	2.203	1.418	1.204	-0.214	-0.107	1.989	2.096
Slovenia	1.760	1.130	0.617	-0.512	-0.256	1.248	1.504
Yugoslavia	2.127	1.323	0.966	-0.357	-0.178	1.770	1.948
Baltic Region							
Estonia	1.868	1.327	0.836	-0.491	-0.246	1.377	1.623
Latvia	1.769	1.255	0.790	-0.464	-0.232	1.305	1.537
Lithuania	1.726	1.147	0.955	-0.192	-0.096	1.533	1.630
Non European Countries							
Australia	2.057	0.783	0.632	-0.151	-0.075	1.907	1.982
Canada	1.720	0.720	0.626	-0.095	-0.047	1.625	1.673
Japan	1.603	0.517	0.372	-0.145	-0.072	1.458	1.531
New Zealand	2.245	0.948	0.738	-0.209	-0.105	2.036	2.140
United States	1.947	1.059	0.997	-0.062	-0.031	1.885	1.916

Notes : a=1972, b=1973, c=1974

Table 9 – Childbearing (cumulated cohort fertility rate – CCFR) after 27th birthday in projected 1975 TCFRs compared to 1965 CCFR after 27th birthday, 36 low fertility countries

Country	1975 or latest cumulated cohort fertility rate up to 27th birthday	1965 cumulated cohort fertility rate after 27th birthday	Implied CCFR after 27th birthday in			Percent change between 1965 CCFR after 27th birthday and		
			1975 TCFR assuming no recuperation	1975 TCFR assuming 50 percent recuperation	1975 TCFR assuming 100 percent recuperation	1975 CCFR assuming no recuperation	1975 CCFR assuming 50 percent recuperation	1975 CCFR assuming 100 percent recuperation
Nordic Region								
Denmark	0.521	1.239	1.239	1.319	1.398	0	6	13
Finland	0.566	1.225	1.225	1.284	1.343	0	5	10
Norway	0.629	1.234	1.234	1.344	1.455	0	9	18
Sweden	0.483	1.181	1.181	1.342	1.503	0	14	27
Western Europe								
Belgium	...	...	...	...	...	...	...	...
England & Wales	0.686	1.070	1.058	1.127	1.196	-1	5	12
France	0.597	1.183	1.183	1.302	1.421	0	10	20
Netherlands	0.392	1.280	1.280	1.333	1.385	0	4	8
West Central Europe								
Austria	0.631	0.795	0.795	0.898	1.001	0	13	26
Former FRG	0.537[a]	...	...	...	-0.537	...	...	...
Former GDR	0.628[a]	0.405	0.405	0.670	0.934	0	65	130
Switzerland	0.425	1.096	1.096	1.162	1.229	0	6	12
Southern Europe								
Greece	0.491	0.816	0.815	1.036	1.257	0	27	54
Italy	0.236[b]	...	...	...	-0.236	...	...	...
Portugal	0.587	0.908	0.908	1.069	1.230	0	18	35
Spain	0.282[a]	...	...	...	-0.282	...	...	...
East Central Europe								
Czech Republic	0.788	0.513	0.513	0.828	1.143	0	61	123
Hungary	0.759	0.665	0.665	0.938	1.211	0	41	82
Poland	0.812	0.698	0.698	0.943	1.187	0	35	70
Slovak Republic	0.917	0.558	0.558	0.838	1.119	0	50	101
Eastern Europe								
Bulgaria	0.924	0.341	0.341	0.625	0.908	0	83	166
Romania	0.886	0.431	0.431	0.727	1.023	0	69	137
Russia	0.941[c]	0.408	0.408	0.562	0.717	0	38	76
West Balkan Region								
Bosnia & Herzegovina	...	...	...	...	...	...	...	...
Croatia	0.790[c]	0.740	0.740	0.914	1.089	0	24	47
Macedonia	1.204	0.784	0.784	0.891	0.998	0	14	27
Slovenia	0.617	0.631	0.631	0.887	1.143	0	41	81
Yugoslavia	0.966	0.804	0.804	0.982	1.161	0	22	44
Baltic Region								
Estonia	0.836	0.542	0.542	0.787	1.033	0	45	91
Latvia	0.790	0.514	0.514	0.747	0.979	0	45	90
Lithuania	0.955	0.578	0.578	0.674	0.771	0	17	33
Non European Countries								
Australia	0.632	1.275	1.275	1.350	1.425	0	6	12
Canada	0.626	1.000	1.000	1.047	1.094	0	5	9
Japan	0.372	1.099	1.086	1.159	1.231	-1	5	12
New Zealand	0.738	1.298	1.298	1.402	1.507	0	8	16
United States	0.997	0.888	0.888	0.919	0.950	0	4	7

Notes : a=1972, b=1973, c=1974

Table 10 – Number of countries in which women born in 1931, 1949 and 1967 experienced specified total cohort fertility rates and average TCFRs, and alternatives projected for the 1975 TCFR

Total cohort fertility rate	*Birth cohort*					
	1931	*1949*	*1967*	*1975 TCFR no recuperation*	*1975 TCFR 50% recuperation*	*1975 TCFR 100% recuperation*
Less than 1.40	-	-	-	9	1	-
1.40 - 1.59	-	-	4	9	8	1
1.60 – 1.79	-	1	11	8	11	10
1.80 – 1.99	-	15	11	4	9	11
2.00 – 2.19	9	10	4	1	2	7
2.20 – 2.39	5	5	1	-	-	2
2.40 – 2.59	3	3	-	-	-	-
2.60 and above	11	-	-	-	-	-
Total number of countries	**28**	**34**	**31**	**31**	**31**	**31**
Average TCFR (unweighted)	***2.58***	***2.04***	***1.83***	***1.56***	***1.72***	***1.88***

Figure 1 – Age-specific fertility rates. Norway and Czech Republic. birth cohorts 1930. 1940. 1950. 1960. 1965. 1970. 1975 and 1980.

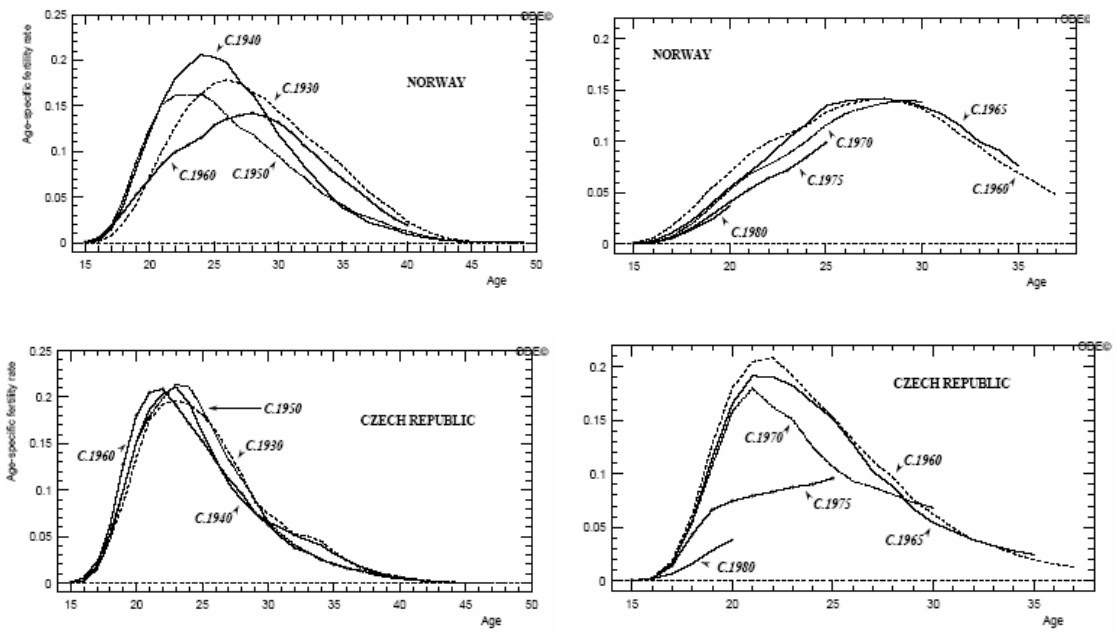

Figure 2 - Differences in cumulative age-specific cohort fertility rates between base and subsequent cohorts. Denmark. Austria. the Czech Republic and Romania. women born in 1950 (base). 1955. 1960. 1965. 1970. 1975 and 1980

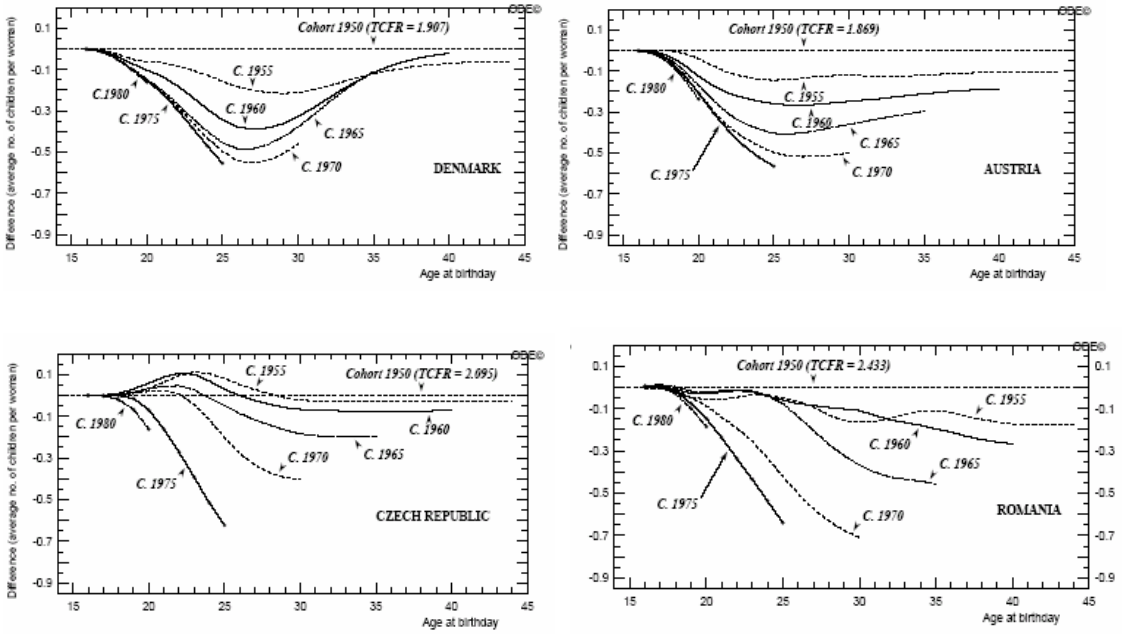

Figure 3 – Age-specific fertility rates. Czech Republic. Bulgaria. Slovenia and Estonia. birth cohorts 1960. 1965. 1970. 1975 and 1980