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Patterns of low and lowest-low fertility in Europe

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In this paper we conduct descriptive aggregate analyses to revisit the relationship of low and lowest-low period fertility to cohort fertility and key fertility-related behaviour such as leaving the parental home, marriage, and women's labour force participation. Our analyses show that the cross-country correlations in Europe between total fertility and the total first marriage rate, the proportion of extramarital births, and the labour force participation of women reversed during the period from 1975 to 1999. By the end of the 1990s there was also no longer evidence that divorce levels were negatively associated with fertility levels. We argue that lowest-low fertility has been particularly associated with a 'falling behind' of cohort fertility at higher birth orders and later ages. From these analyses we conclude that the emergence of lowest-low fertility during the 1990s was accompanied by a disruption or even a reversal of many well-known relationships that have been used to explain cross-country differences in fertility patterns.

Keywords: low fertility; marriage; labour force participation; cohort fertility; Europe; convergence

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Introduction

A new aspect of current low and lowest-low fertility patterns in Europe is that the postponement of childbearing—particularly for first births—has emerged as a crucial determinant of differences in fertility levels among developed countries (Kohler et al. 2002). This transition towards a late pattern of childbearing implies that the extent to which specific socio-economic and institutional contexts accommodate late childbearing has emerged as an essential determinant of cross-country variation in fertility levels in Europe and other developed countries. In order to improve understanding of this interrelation between institutional contexts and patterns of childbearing, we present here a series of descriptive aggregate analyses to revisit the relationship of low and lowest-low period fertility to cohort fertility and key fertility-related behaviours such as leaving the parental home, marriage, and women's labour force participation. These analyses can improve our understanding of the demographic, socio-economic, and institutional context of the emergence—or non-emergence—of lowest-low fertility in European countries, and it characterizes the basic demographic and socio-economic patterns associated with low and lowest-low fertility in contemporary Europe.

Fertility-related patterns of household and union dynamics

Differential fertility trends in Europe, and in particular the divergence between countries with low fertility (fertility moderately below replacement level) and countries with lowest-low fertility (defined as a level of total fertility at or below 1.3), are closely related to cross-country differences in the processes of union formation and dissolution. In this section we therefore investigate, from a cross-sectional perspective, the interrelation between union formation and dissolution and period/cohort patterns of fertility in the mid-1970s and late 1990s. In order to provide a conceptual framework for these interrelations, we adopt a life-course approach and focus on *life-course decision-making*. In this framework the decision to become a parent is embedded in a process that involves several transitions in early adulthood leading to the transition to parenthood (Modell et al. 1976). The central transitions in early adulthood, which also receive the largest attention in life-course studies, are leaving the parental home and forming a separate household from one's parents and the formation of a union with a partner. We consider these two transitions in turn.

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Leaving the parental home

Leaving home is one of the crucial nodes of the life-course and a central event in early adulthood. It generally implies the formation of a new household and greater autonomy for young people in all aspects of social life and in the making of decisions, including many fertility-related decisions. Second, and most important for our context, childbearing in developed countries almost invariably takes place after young adults have left their parental home; home-leaving constitutes a central correlate of fertility and union formation in Europe and other industrialized countries.

In a pioneering study, Kiernan (1986) investigated home-leaving in six Western European countries in 1982. The study identified Denmark as the country with the earliest home-leaving, followed by West Germany, France, the Netherlands, Ireland, and the UK. In a follow-up investigation, Fernández Cordón (1997) examined the living arrangements of young adults over time in Spain, Greece, Italy, France, Germany, and the UK between 1986 and 1994. These longitudinal analyses revealed that Italy had the largest share of young people co-residing with their parents during early adulthood, while the UK had the smallest share. Subsequently, Corijn (1999) found that cohorts in most European countries born around 1950 and 1960 were postponing the transition out of the parental home. This common trend towards delayed home-leaving, however, coexisted with substantial variation in the timing of this event across countries: Italy and Spain were among the countries with a late separation from the parental home, while Austria, the Netherlands, and Sweden were among the countries with an early pattern.

Despite this overall heterogeneity in patterns of home-leaving, however, there was an important regularity in the relationship of home-leaving to lowest-low fertility. In particular, retrospective survey data—which are the only available data source for this purpose—reveal that the timing of home-leaving has been quite uniformly concentrated at relatively late ages among countries with lowest-low fertility. In an international comparison of the timing of home-leaving for cohorts born around 1960, for instance, Italy, which was the first country experiencing lowest-low fertility in the early 1990s, had the highest mean age of home-leaving both for men and women: 26.7 and 23.6 years, respectively. The age in some Central and Eastern European countries, including those with lowest-low fertility, is not far from that in the latest-late pattern of Southern European countries. On the other hand, Sweden represents the opposite pole of the ranking, with a mean age of 20.2 years for men and 18.6 for women, resulting in a difference of more than 6.5 years (men) and 5 years (women) in the age of home-leaving across European countries (see Billari et al. 2001).

Fertility and marriage: A shifting relationship?

In a well-known study, Hajnal (1965) traced an East–West divide in historical family systems in Europe—the so-called Hajnal line between the cities of Trieste in north-eastern Italy and St Petersburg in western Russia. To the west of this line, the family formation pattern was dominated by a neo-local nuclear family with relatively late marriage and a significant proportion of individuals who never married. To the east of the line, marriage was early and universal, and the family often extended. This divergence of marriage pattern along Hajnal's line persists to the present day. It is particularly clear in distinguishing Central and Eastern Europe from Southern Europe (Monnier and Rychtarikova 1992). Countries to the west of Hajnal's line reveal greater heterogeneity and diversity in contemporary marriage behaviour (Reher 1998).

Although historical patterns were an important influence on the forms of contemporary marriage behaviour and family organization, the emergence of lowest-low fertility was associated with an important shift in the relationship between marriage and fertility between the mid-1970s and the end of the 1990s. In particular, it has traditionally been argued that cumulated fertility is inversely related to age at marriage, and variations in this variable have often been an important factor in explanations of aggregate fertility differences across countries. For instance, the relationship between total fertility and age at first marriage has been shown to be surprisingly close to a linear one (Henry 1976; Inaba 1996), and Billari et al. (2000) have estimated that a 1-year increase in age at marriage would have brought down the number of female children ever born by about 0.08 in Italian cohorts born around 1950.

In contrast to this positive association between marriage and fertility, the recent emergence of lowest-low fertility, especially in Southern Europe, is associated with a situation in which long-term partnership commitments—symbolized by a high prevalence of legal marriage and low prevalence of divorce—apparently represent an obstacle to the progression to (relatively) high fertility levels. To illustrate this association, we compare, on the left-hand side of Figure 1, the level of total fertility with

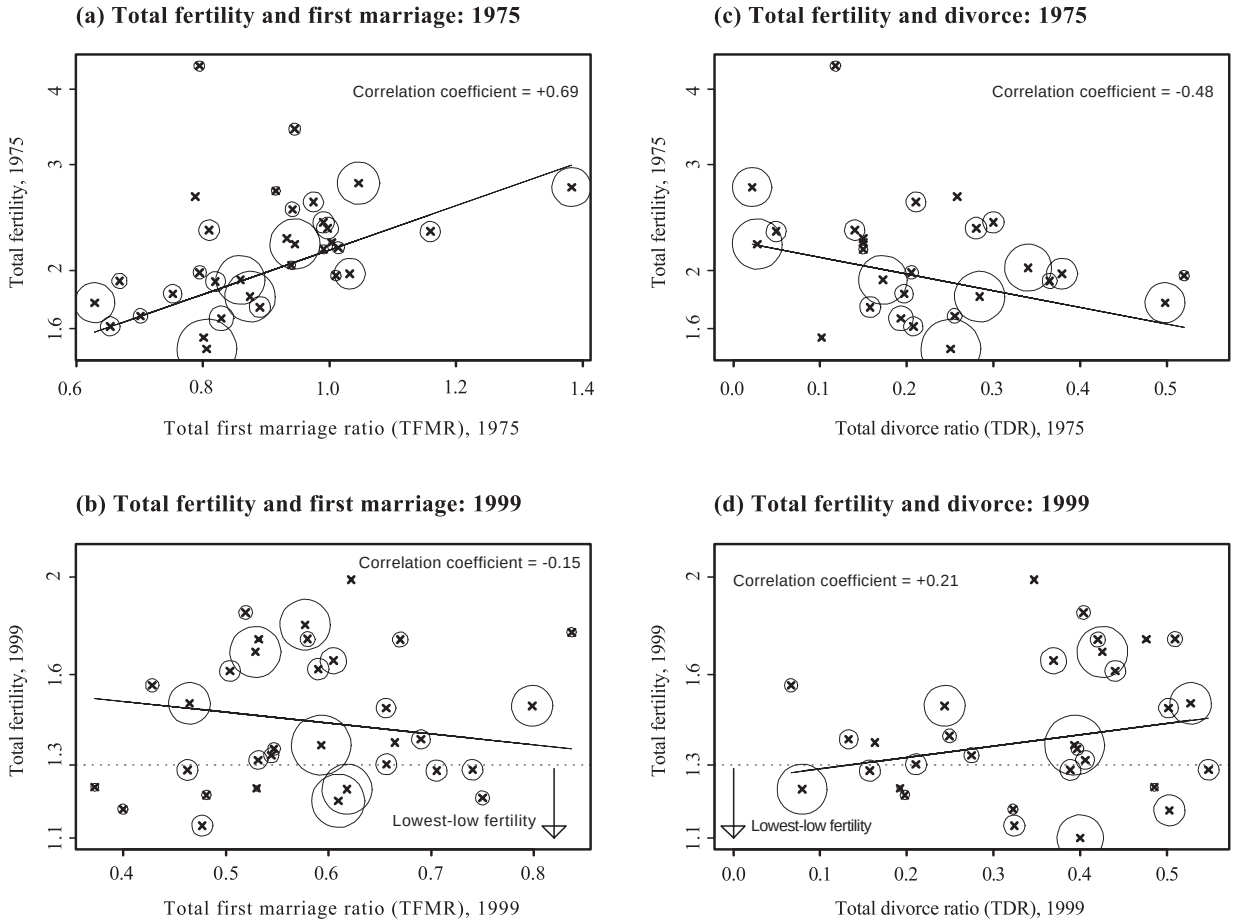

Figure 1 Relationship between total fertility, marriage, and divorce across European countries, 1975 and 1999
Notes: (1) The total divorce ratio (TDR) for Spain is for 1995. The '×' gives the exact position of a country, while the area of the circle is proportional to the country's population size in 1990. The regression line included in the figures is obtained from a weighted regression with weights equal to the population size. The corresponding correlation coefficients are indicated in the graphs (see also Table A2). See Table A1 for the list of included countries and the underlying data
(2) Because small differences in levels of total fertility become increasingly relevant in low-fertility situations, the axis in Figure 1 and subsequent figures is rescaled so that distances in total fertility level are proportional to differences in the corresponding stable population growth rates. These calculations of the stable population growth rate are based on a mean age at birth of 30 years, which is a roughly representative mean age for contemporary Western European countries, with no mortality before the mean age of childbearing and a proportion of girls among all births of 0.4886. Specifically, the distances on the y-axis of the graphs are proportional to $r = \log(\text{total fertility} \times 0.4886)/30$. The regression line included in this and all other figures is obtained from a weighted regression of the transformed total fertility levels plotted on the y-axis, that is, $r = \log(\text{total fertility} \times 0.4886)/30$, on the corresponding x-axis values with weights that are equal to the population size. The correlation indicated in the figures is the corresponding weighted correlation coefficient (see also Table A2)
Source: Council of Europe (2001)

the total first marriage ratio (*TFMR*), which is the sum of age-specific first marriage rates, where the latter are calculated as the number of first marriages in a single year divided by the person years lived by women in this age interval during a calendar year (see Table A1 for the list of included countries and the underlying data). In order to indicate the relevance of individual countries for the relationships in Figure 1, the data points are surrounded by circles that have an area proportional to a country's population size in 1990.

Figure 1(a) shows that in 1975 marriage and fertility were still closely intertwined and there was a positive correlation between total fertility and *TFMR*. The correlation radically changes at the end of the 1990s. After the emergence of lowest-low fertility, the positive correlation between total fertility and *TFMR* becomes much weaker, and countries with high fertility levels also exhibit low marriage propensity (Figure 1(b)). (Estimates of the correlation coefficients are reported in Table A2.)

A similarly shifting relation occurs also with respect to fertility and divorce (Figure 1(c), (d)). In 1975, a higher level of divorce in European countries was associated with a lower level of fertility in cross-sectional comparisons, and the total period divorce

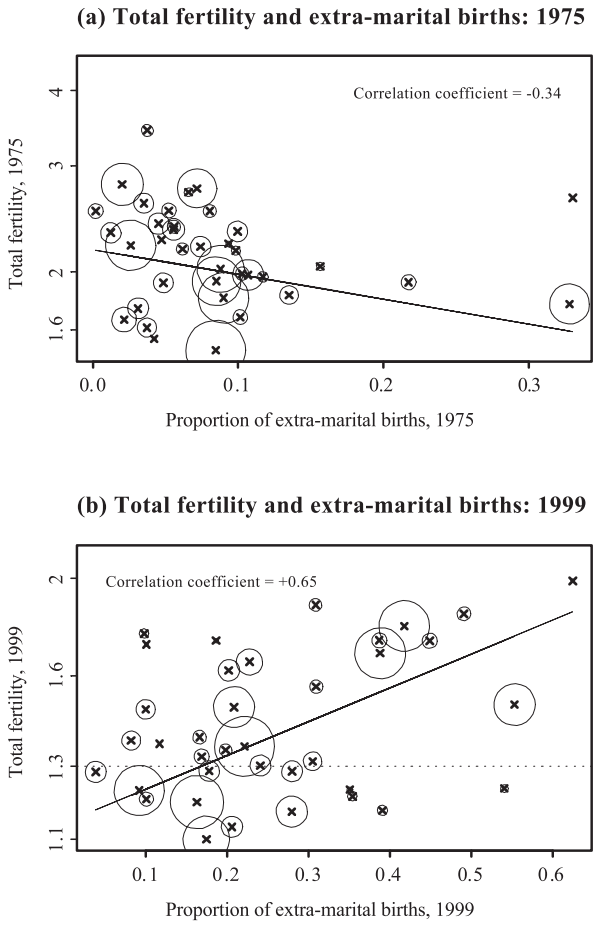

Figure 2 Relationship between the proportion of extramarital births and total fertility across European countries, 1975 and 1999
Note: See Note 2 to Figure 1
Source: Council of Europe (2001)

ratio (*TDR*) exhibited a negative correlation with the level of total fertility (Figure 1(c)). (The total divorce ratio, or total divorce rate, is the sum of age-specific divorce rates, where the latter are calculated as the number of divorces in a single-year age interval divided by the person years lived by women in this age interval during a calendar year.) The correlation between total fertility and *TDR* has become weak by 1999, and if a systematic relationship exists at all between these variables in that year, it has become a positive one: countries with higher *TDR* also have higher fertility levels (Figure 1(d)).

In Figure 2 we illustrate that, in addition to the shifting centrality of marriage, there was a reversal in the relationship between the extent of out-of-wedlock childbearing and the level of fertility. A cross-sectional comparison of European countries in 1975 reveals a positive correlation between the level of extramarital fertility and total fertility. By 1999 this correlation has become negative. Along with this reversal, the Southern European countries, Italy and Spain, stand out as combining both lowest-low fertility and the lowest prevalence of non-marital fertility (see also Table A2).

In summary, the above analyses reinforce the argument that the emergence of lowest-low fertility during the 1990s was associated with fundamental shifts in the relationships between fertility and marriage. Cross-sectional analyses of European countries revealed an increasing disconnection between marriage patterns and fertility levels after the emergence of lowest-low fertility during the decade, and marriage formation and dissolution ceased to be important predictors of national fertility levels in the late 1990s. Moreover, the above analyses show that the aggregate cross-country relationship between partnership formation/dissolution and level of fertility became quite indeterminate in the late 1990s—a striking change from the strong relationship between fertility and union formation and dissolution that had prevailed 20 years earlier. In addition, further analyses—not reported here in detail—reveal important differences in home-leaving, and union formation and dissolution among lowest-low fertility countries (see also Billari et al. 2001; Council of Europe 2001). In Southern Europe there is a pattern of late separation from the parental household, a low prevalence of cohabitation and extramarital fertility, and a high centrality of marriage with long-term commitments and low rates of divorce. The pattern in Central and Eastern Europe is more diverse than the Southern European pattern and is characterized by earlier home-leaving, lower rates of marriage, and higher rates of divorce and extramarital fertility.

Fertility-related patterns of labour force participation

In addition to witnessing a changing relationship between fertility and marriage or divorce, the 1990s have also seen challenges to the conventional wisdom about the aggregate-level relationship between total fertility and women's labour force participation. Conventional economic theory predicts that increases in the wage rate of women lead to increases in women's labour force participation and decreases in fertility owing to increased opportunity costs of children in combination with a low income elasticity of the number of children (Willis 1973; Becker 1981; Cigno 1991). At the macro level, this relationship has been translated into the hypothesis that total fertility and the female labour force participation ratio (*FLFPR*), or female labour force participation rate, should be inversely related in cross-country studies.

(The *FLFPR* is the number of women who are participating in the labour force divided by the number of women aged 25–64, regardless of employment status.) In this section we investigate the empirical evidence for this hypothesis as part of the overall attempt in this paper to portray the socio-economic context of lowest-low fertility trends.

Several recent studies have documented a changing cross-country relationship between fertility and women's labour force participation. For instance, Ahn and Mira (2002), Engelhardt et al. (2004), and Kögel (2004) have shown that the cross-country correlation between total fertility and the *FLFPR* changed its sign in OECD countries during the mid-1980s and early 1990s. This finding has also been confirmed by regression-based analyses (Esping-Andersen 1999; Brewster and Rindfuss 2000), which have shown that the labour force participation of women had a *positive* (and significant) influence on total fertility in cross-sectional analyses of OECD countries in the 1990s, but a negative influence in the 1970s.

This reversal is depicted in Figure 3, which plots total fertility against *FLFPR* in 1975 and 1996 for a number of countries in Western Europe, where traditionally there have been substantial differences between countries in the participation of women in the labour force (see also Table A2). The countries used include Austria, Belgium, Denmark, Finland, France, West Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, UK, Greece, and Spain.

In 1975, countries with a high *FLFPR*, such as Sweden or Denmark, exhibited low fertility in a European comparison, while countries with a low *FLFPR*, such as Italy or Spain, had relatively high fertility. In 1996, high *FLFPR* is associated with high fertility, for example, in Denmark and Sweden, while countries with lowest-low fertility, such as Italy and Spain, have a quite modest participation of women in the labour market. It is also important to note that, for the countries shown in Figure 3, changes in fertility level were more prevalent than changes in the labour force participation of women; the relative positions of countries with respect to female labour force participation ratios were remarkably constant during the period 1975–96 (e.g., see the labelled points in the figure).

The above findings about the changing association between total fertility and women's labour force participation have prompted several further investigations of this issue. Ahn and Mira (2002), for instance, emphasize the relevance of Mediterranean countries in the above pattern because the

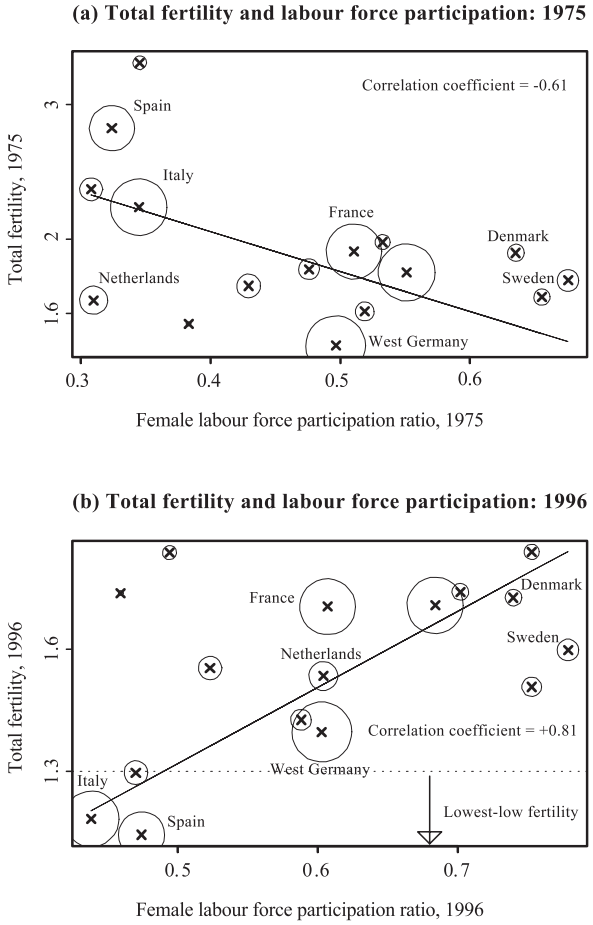

Figure 3 Relationship between the labour force participation of women and total fertility across European countries, 1975 and 1996
Note: See Note 2 to Figure 1
Source: Kögel (2004)

emergence of lowest-low fertility is an important factor contributing to the reversal of the correlation. Brewster and Rindfuss (2000) emphasize also the role of institutional arrangements, e.g., different family policies, childcare, or welfare-state systems, and they stress the altered social norms regarding the combination of childrearing with women's participation in the labour force. Lowest-low fertility in Southern Europe has occurred in a context where there is a very low compatibility of childbearing with women's participation in the labour market, owing to difficulties in entering and re-entering the labour market and the limited flexibility of working hours (Bettio and Villa 1998; Del Boca 2002).

Obviously, the above studies cannot make inferences about causality because they rely on relatively simple aggregate data and analyses. One attempt to overcome this limitation has been made by Engelhardt et al. (2004) who investigate macro-level time-series data for France, West Germany, Italy, Sweden, the UK, and the USA. The study shows that

macro-level causality—or specifically, Granger causality (e.g., see Hamilton 1994)—occurs in both directions, that is, from women's labour force participation to fertility and vice versa. In addition, the study supports the above cross-sectional evidence in Figure 3 and finds that the negative association between total fertility and the *FLFPR* became weaker over time for each individual country towards the end of the 1980s and at the beginning of the 1990s, and for selected countries it even reversed its sign from positive to negative. An exception is Italy, where the negative association between total fertility and *FLFPR* has not weakened at all over time. These conclusions, however, are partially challenged by Kögel (2004), who finds that there is *not* a change in sign in the association between total fertility and *FLFPR* over time if analyses take account of country-specific fixed effects. Nevertheless, even after controlling for country-specific effects, Kögel's analyses show that the negative association between fertility and *FLFPR* has weakened over time, and the analyses also give further support to the finding that the fertility decline in the Mediterranean countries has been an important contributor to the shifting relationship shown in Figure 3.

Cohort fertility trends

The analyses in the previous sections focused on the shifting associations between period fertility and various fertility-related behaviours such as household formation and dissolution, or labour force participation. In this section we turn our attention to cohort fertility, and in particular to how the effects of low total fertility (≤1.3) on cohort fertility in Southern and Eastern European countries compare with the effects in other low-fertility countries in Europe. Clearly, the effect of lowest-low fertility will be modest if it is only temporary and births are merely postponed but not forgone. On the other hand, the implications will be severe if lowest-low fertility persists and if it is caused by reductions in completed fertility levels rather than changes in the timing of fertility.

In a series of influential articles, Frejka and Calot (2001a–c) have recently investigated patterns of cohort fertility as revealed up to the mid- to late 1990s. Because analyses of completed cohort fertility are no longer feasible for women born from the early 1960s onwards, these analyses are based on cumulated fertility, that is, the number of children born to women at various ages up to the most recent calendar year. In order to provide a context and reference for these analyses, this study of cumulated fertility is often conducted relative to a *reference cohort* (e.g., Frejka and Calot 2001a–c). In this case, instead of being based on the absolute level of fertility, the analyses focus on the differences between the cumulated fertility of women born in a calendar year and the number of children born to women in the reference cohort.

A common pattern for many low and lowest-low fertility countries is a gradually increasing difference in cumulated fertility from the reference cohort in early adulthood, where union formation and first-birth childbearing have traditionally been concentrated. At age 32, for example, women in the Italian cohort born in 1965 had on average 0.52 fewer children than the cohort born in 1950. This difference in fertility level with respect to the reference cohort increases for younger women. At age 27 Italian women born in 1970 already had 0.63 fewer total children than the 1950 cohort, and it is likely that this difference further widened as the cohort reached its late 20s. The pattern for many other countries is similar. Frejka and Calot (2001a) have designated this difference in cumulated fertility from the reference cohort as a *fertility deficit*, and they have regarded the increasing deficit during early adulthood in younger cohorts as an indication that cohort fertility in many European countries is likely to remain substantially below that of the 1950 cohorts. (The notion of *fertility deficit*, and its counterpart, *fertility surplus* is somewhat unfortunate since it tends to imply that the reference cohort reflects a 'correct' or 'desirable' fertility pattern, and that deviations from this pattern in younger cohorts constitute either surpluses or deficits that are positively or negatively evaluated by demographers. We retain this term for consistency with the literature.) These researchers have also argued that the trend towards successively lower cohort fertility is likely to persist in the foreseeable future, and is unlikely to be reversed unless women who are about to enter, or who are in the midst of, their reproductive periods adopt fertility patterns markedly different from those of women born in the 1960s and 1970s.

While we do not necessarily disagree with this conclusion about further declines in completed cohort fertility, the usefulness of this finding for assessing lowest-low fertility is limited. In particular, as with many comparisons, the conclusion hinges critically on the choice of the reference cohort. In addition, the above comparisons do not reveal the fact that there are substantial differences across countries in the timing of fertility and in the effect of delays in childbearing on completed cohort fertility.

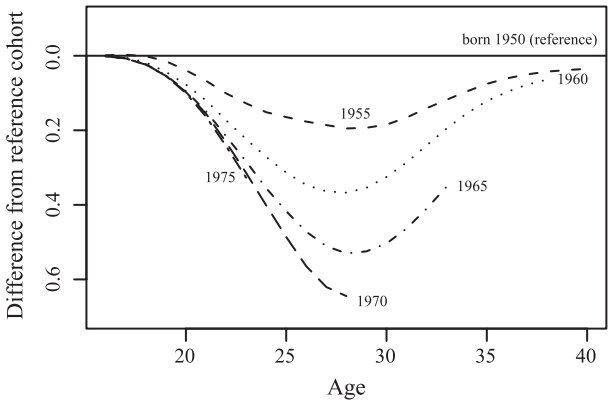

Figure 4 Cohort fertility by age in Dutch cohorts, all birth orders: the graphs show the difference between the cumulated fertility of cohorts born 1955, 1960, . . ., 1975 and the reference cohort born in 1950
Source: Evert van Imhoff, Netherlands Interdisciplinary Demographic Institute. The data include age-specific and parity-specific childbearing intensities (rates of the first kind) and fertility rates (rates of the second kind) for cohorts born from approximately the 1930s onward

As a counter-example to the Italian pattern discussed above, Figure 4 presents cohort fertility trends in the Netherlands. The Netherlands is noteworthy because its fertility pattern has shown substantial delays in childbearing without marked declines in cohort fertility. The graph shows the difference in cumulated cohort fertility between women born in the period 1955–75 and women in the reference cohort born in 1950. Childlessness in this reference cohort was slightly below 15 per cent and it achieved a completed fertility of 1.9 children. While younger cohorts in Figure 4 exhibit a growing 'fertility deficit' during early adulthood, delayed births provide a successful recuperation. The difference from the 1950 reference cohort in cumulated fertility attains a maximum when members reach the late 20s for cohorts born during the period 1955–70, and then declines as these cohorts age and enter their 30s (see also Table A3). Moreover, the difference almost disappears for women born in 1955 and 1960. Whether the same holds for the 1965 cohort is difficult to assess on the basis of our present analyses, but Figure 4 clearly indicates that the difference is going to diminish for this cohort too before it ends its childbearing years.

In order to understand the implications of delayed childbearing for cohort fertility, the Netherlands may therefore serve as a 'role model' for low and lowest-low fertility countries: women in the Netherlands delayed the onset of childbearing to very late ages compared with other European countries, but this postponement occurred without substantially reducing the quantum of fertility, or equivalently, the number of children born during the life-course. A comparison of cohort fertility patterns in low and lowest-low fertility countries with the Dutch cohort patterns may therefore be very illuminating.

In Figures 5 and 6 we replicate some of the analyses presented in Frejka and Calot for first births and overall fertility using the fertility pattern of Dutch cohorts as a reference. The figures present the difference in the cumulated cohort fertility—separately for first birth and overall fertility—between cohorts born in a selected country and the Dutch cohort born in the same year. That is, the fertility pattern of the 1960 cohort in Italy is compared with the 1960 cohort in the Netherlands, the 1965 Italian cohort is compared with the 1965 Dutch cohort, and so forth. The cumulated fertility of these Dutch reference cohorts is reported in Table A3. Because comprehensive analyses of cohort fertility are beyond the scope of this paper, we focus in our analyses on some key European patterns: Italy (which was the first country to attain lowest-low fertility in the 1990s), Sweden (which was a forerunner of the Second Demographic Transition), the Czech Republic (which represents transition countries with a rapid change to delayed childbearing), and Bulgaria (which represents transition countries with only modest delays in childbearing during the 1990s).

Most importantly, Figures 5 and 6 reveal that switching reference cohorts generates a striking contrast with our earlier findings (as well as to the related findings in Frejka and Calot). Once the Dutch reference cohorts are used, the analyses suggest that lowest-low fertility is *not* necessarily related to the fact that fertility rates in early adulthood, or up to the mid-20s, are particularly low. On the contrary: some key lowest-low fertility countries such as Italy, the Czech Republic, and Bulgaria exhibit an identical or higher cohort fertility during early adulthood than cohorts in the Netherlands born in the same year. This finding is particularly important since period and cohort fertility rates in the Netherlands were relatively high compared with other European countries in the late 1990s, and the Netherlands is sometimes portrayed as a 'success story' in its adjustment to demographic challenges posed by the fertility patterns of the 1990s (e.g., Lesthaeghe 2001; van Imhoff 2001; Coleman and Garssen 2002).

The higher cumulated level of childbearing in lowest-low fertility countries during early adulthood is particularly marked in the Czech Republic and Bulgaria (and in other CEE countries not discussed here), which still have a relatively young pattern of childbearing (Figure 6). For instance, the surplus exceeds 0.45 first children and 0.7 total children at age

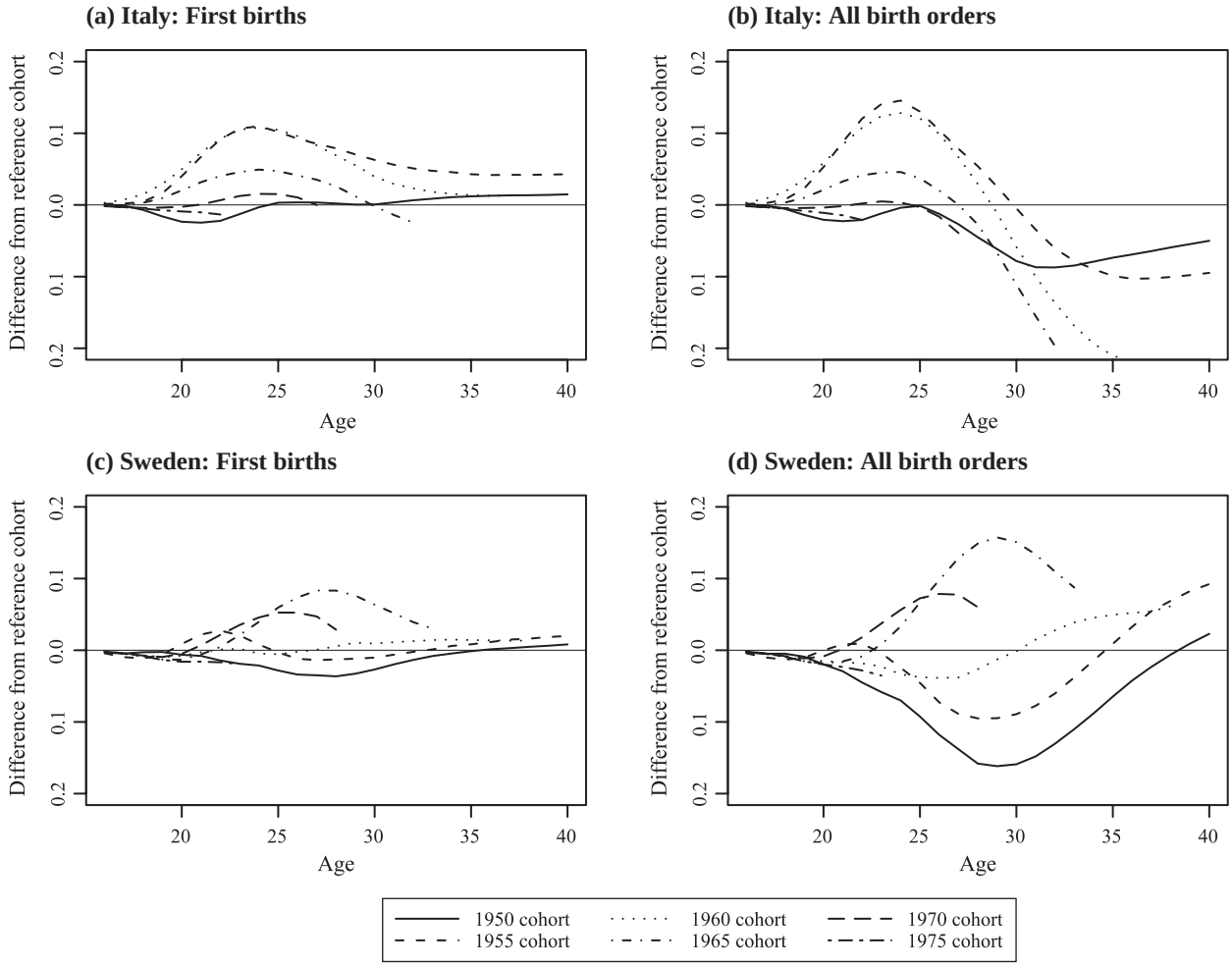

Figure 5 Cohort fertility by age in Italian and Swedish cohorts: the graphs show the difference in the cumulated fertility of Italian and Swedish cohorts born 1950, 1955, . . ., 1975 compared with Dutch cohorts born in the same year
Note: The data for Sweden do not include foreign-born women
Source: Evert van Imhoff, Netherlands Interdisciplinary Demographic Institute; Observatoire Démographique Européen for Italy; Gunnar Andersson (see also Andersson 1999) for Sweden; these data do not include foreign-born women living in Sweden. The data include age-specific and parity-specific childbearing intensities (rates of the first kind) and fertility rates (rates of the second kind) for cohorts born from approximately the 1930s onward

25 for cohorts born before 1975, and it has markedly declined only in the most recent cohort, born in 1970. Despite this recent decline, the comparison between the Czech and Dutch cohort patterns suggests that, even in young Czech cohorts, fertility may not decline below the levels observed in the Netherlands. Moreover, the 'surplus' in early adulthood opens the possibility that cohort fertility in the Czech Republic—and other CEE countries—will remain above that of many Western European countries for the foreseeable future if period fertility trends stabilize or reverse.

Compared with this Czech pattern, the difference between Italian and Dutch cohorts in Figure 5 is more modest and reaches a maximum of only 0.11 for first births and 0.15 for all birth orders combined around age 25. However, despite the less remarkable fertility difference in comparison with the Netherlands, a more detailed look at the Italian pattern is revealing about the determinants of lowest-low fertility. In particular, the difference in Figure 5(a) is positive or close to zero for all cohorts across all ages at which cohorts are observed. This suggests that all Italian cohorts born during the period 1950–75 are ahead of, or at least on a par with, the corresponding Dutch cohorts in first-birth childbearing. The emergence of lowest-low fertility in Italy, therefore, does not seem to be due to the fact that Italian cohorts have their first children at a particularly slow rate. On the contrary, Italian women in young cohorts born up to 1975 have approximately the same, or even a higher number of first children than Dutch women in the same cohorts, despite the fact that total fertility in the Netherlands exceeded that of Italy by 35–40 per cent in the late 1990s.

This relatively higher cohort fertility in Italy also occurs at young ages when all birth orders are

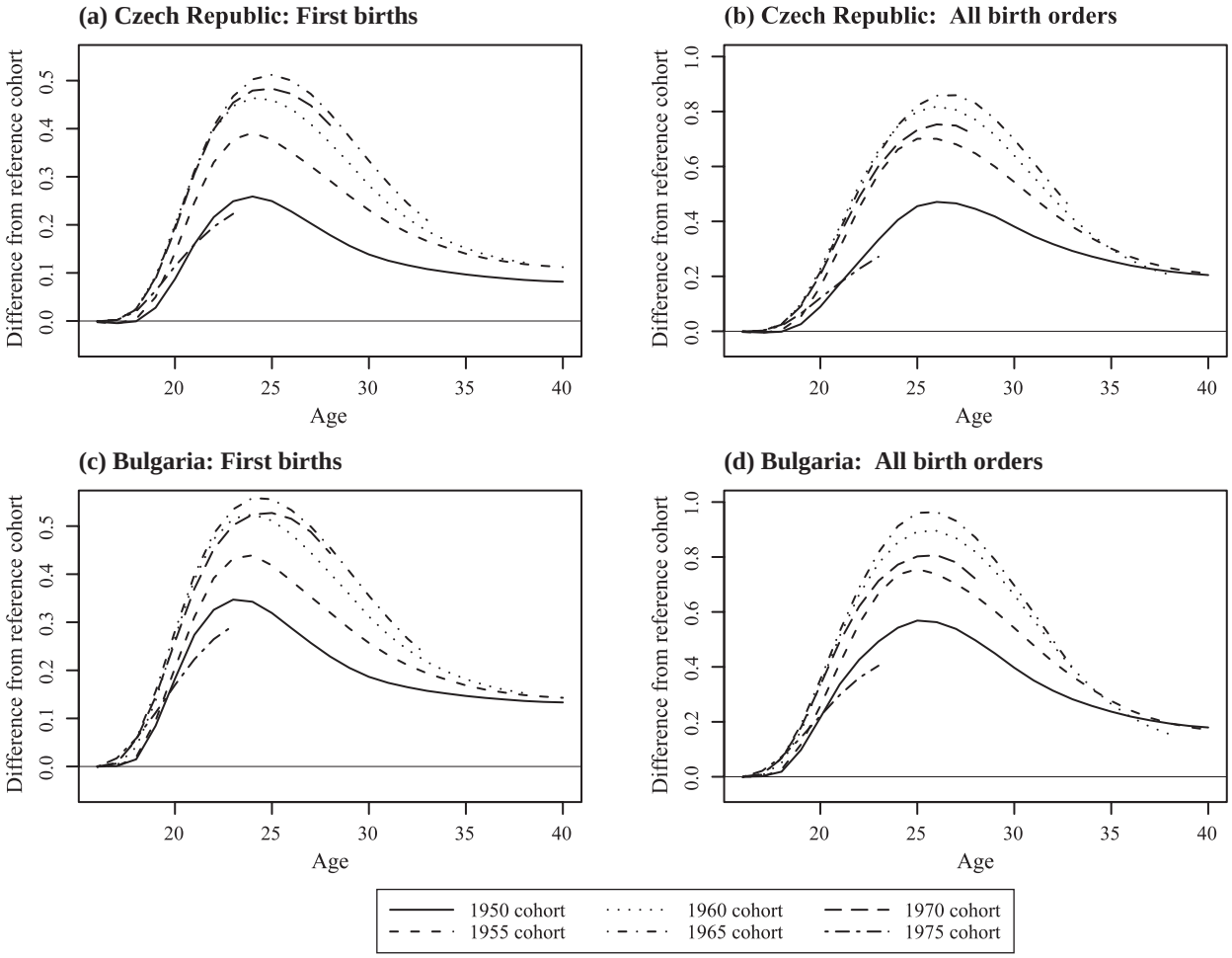

Figure 6 Cohort fertility by age in Czech and Bulgarian cohorts: the graphs show the difference in the cumulated fertility of Czech and Bulgarian cohorts born 1950, 1955, . . ., 1975 compared with Dutch cohorts born in the same year
Source: Evert van Imhoff, Netherlands Interdisciplinary Demographic Institute; Observatoire Démographique Européen. The data include age-specific and parity-specific childbearing intensities (rates of the first kind) and fertility rates (rates of the second kind) for cohorts born from approximately the 1930s onward

combined, with the exception (relatively small in magnitude in both cases) of the 1955 and 1975 cohorts. Italian cohorts have more children than their Dutch counterparts in their early 20s, and Italian cohorts born in the period 1955–65 had even more children than corresponding Dutch women up to the age of at least 27 years. An important reversal, however, occurs around age 30, and Italian cohorts fall behind the corresponding cohorts in the Netherlands in cumulated fertility. For the cohort born in 1950 this reversal is very modest, and Italian women have only about 0.05 children less than their Dutch cohort-mates. The difference, however, increases in younger cohorts. For instance, the Italian cohort born in 1960 has 0.22 fewer children at age 35 than the respective Dutch cohort, and it seems likely that the gap has increased further for women born in 1965.

On a cohort level, therefore, the Italian lowest-low fertility pattern does *not* include a diminished propensity to become a parent or to have particularly low fertility in early adulthood. On the contrary, Italian cohorts tend to be ahead of their Dutch cohort-mates in first births and overall fertility level until they reach their mid-20s (1970 cohort) or even late 20s and early 30s (cohorts born up to 1965). What is characteristic of the Italian lowest-low fertility pattern, however, is a 'falling behind' later in the life-course in the progression to births of higher parities. This falling behind at higher ages is absent in countries that have more successfully accommodated late childbearing. Figure 5 depicts the Swedish case as one example of this pattern.

Concluding discussion: Divergent fertility patterns in a comparative perspective

In this concluding discussion we use the empirical findings presented in the previous sections to assess whether we can expect developed countries,

especially European countries, to converge in their fertility and fertility-related behavioural patterns, or whether they will persist in their diversity. The relevance of convergence has recently been stressed in the context of the demographic transition from high to low fertility (Wilson 2001), and a similar reasoning suggests that it is of equal or even greater importance to an understanding of fertility trends and life-course patterns in populations with below-replacement fertility. For instance, Mayer (2001) observes that long-standing differences in social and economic institutions between Western European countries play a decisive role in determining the impact of economic globalization on life-course patterns, and he suggests that at least four 'ideal types' of society can be identified within Western Europe and North America: the Scandinavian social democratic welfare states (e.g., Sweden); the Continental conservative welfare states (e.g., Germany); the Southern European welfare states (e.g., Italy), and the liberal market states (e.g., UK, USA) (see also Esping-Andersen 1999). Because these different and often rigid institutional arrangements affect—as the nature of conscious and rational life-course decision-making would lead one to expect—the timing and sequence of key life-course events, such as marriage and births, institutional differences partially explain the different life-courses chosen by individuals in different developed countries.

In addition to these institutional factors, Reher (1998) emphasizes enduring differences between family systems. In particular, he contrasts family patterns in Southern Europe, a predominant characteristic of which are 'strong' ties (Granovetter 1973, 1985), with family patterns in North-western Europe, where 'weak ties' have been typical for several centuries. Reher stresses that these different types of family tie exert a significant impact on current life-course patterns in early adulthood, and he concludes that the 'divergent practices [of contemporary life-course transitions] appear to have deep historical roots' (1998, p. 205).

In contrast to the above studies that focus on the determinants of persisting differences between countries in fertility and fertility-related behaviours, other scholars have emphasized long-term convergence. For instance Watkins (1990), who studied the fertility transition in Western Europe during the period 1870–1960, argued that regional diversity within countries diminished, partly owing to the increasing influence of national rather than local channels of social interaction (e.g., through national media). A further argument suggesting convergence between countries is often derived from Second Demographic Transition theory (Lesthaeghe and van de Kaa 1986; van de Kaa 1987), according to which demographic behaviour in developed countries has become increasingly less constrained by societal norms and more strongly based on individual considerations of the costs and benefits of alternative types of family life. Although the notion of convergence is not explicitly expressed in the initial formulations of Second Demographic Transition theory, the Netherlands and Nordic countries have often been portrayed as forerunners of demographic changes that would gradually lead to more diverse life-courses in all contemporary European countries. In general this diversity would be evident in postponement of childbearing, lower levels of fertility, and the diffusion of new behavioural patterns such as delayed union formation after leaving the parental home, cohabitation, out-of-wedlock childbearing, and divorce.

In order to investigate the above notion of convergence, Billari and Wilson (2001) conducted a comparative analysis of early life-course transitions—such as leaving home, first union, first marriage, and first birth—in nine Western European countries. Using data from the Fertility and Family Surveys conducted in many European countries during the 1990s (e.g., see Klijzing and Corijn 2002), Billari and Wilson compared the experience of 5-year birth cohorts born in the period from 1946–50 to 1961–65. An important result of these analyses is that there was no strong indication of convergence in many fertility and fertility-related behaviours; on the contrary, there was remarkably little convergence in important life-course patterns such as the sequencing of first birth and first marriage or the prevalence of cohabitation in early adulthood. Figure 7(a), for instance, shows the proportion of women starting their first union before marriage. Not surprisingly, Sweden is at the forefront of the diffusion of non-marital first unions: cohabitation before marriage was already widespread among members of the 1946–50 cohort, and the proportion of women having a non-marital first union before marrying reaches almost 100 per cent in the most recent cohort (1961–65). At the other extreme in the spread of non-marital first unions are two Southern European countries with lowest-low fertility, Italy and Spain. Although the proportion of women starting to cohabit in their first union in these countries too is rising, the levels are still very low (11 per cent in Italy and 14 per cent in Spain for the 1961–65 cohort). Between the extreme cases of the range, marked by Sweden at one end and Italy and Spain at the other, Figure 7(a) shows several other European countries with total fertility above the lowest-low threshold of 1.3. A similar pattern is revealed in Figure 7(b), which

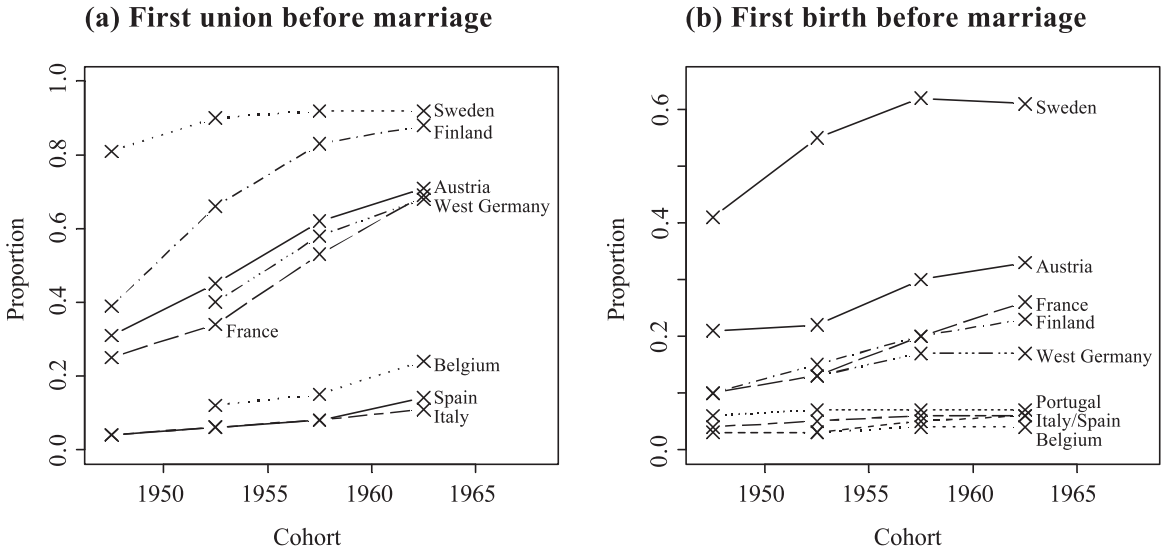

Figure 7 (*a*) Proportion of women starting a consensual union before first marriage in selected Western European countries. (*b*) Proportion of women having a birth before first marriage in selected Western European countries
Note: The data for Belgium apply to only the Flemish part of Belgium
Source: Billari and Wilson (2001)

shows the proportion of women who gave birth to a child before getting married. The figure reveals that Sweden is again at the forefront of the diffusion of extramarital fertility. The 1946–50 cohort had the highest proportion of women who gave birth before their first marriage among all countries in Figure 7(b), and 61 per cent of women were in this category in the most recent cohort. The other extreme of the pattern is represented by the lowest-low fertility countries, Italy and Spain, along with Portugal and Belgium. In all four of these countries first births before first marriage are below 8 per cent of the total. In addition, the country ranking is relatively stable across cohorts, and there have been no movements between the three clusters with low, moderate, and high levels of first births before marriage.

In summary, the patterns of fertility portrayed in this paper allow us to draw initial conclusions about the determinants and macro-level covariates of low and lowest-low fertility in contemporary Europe. First, our portrait of contemporary European fertility patterns identifies a systematic pattern of lowest-low fertility that is characterized by a rapid shift to delayed childbearing, a low probability of progression after the first child (but not particularly low levels of first-birth childbearing), a 'falling behind' in cohort fertility at relatively late ages (in Southern Europe), and a reversal in the relative ranking of lowest-low fertility countries in a European comparison of total fertility levels. At the end of the 1990s, therefore, there emerges a clear clustering of European nations that separates them into countries with low fertility and countries with lowest-low fertility, and this clustering is mirrored in many fertility-related behaviours such as women's labour force participation, the diffusion of cohabitation or out-of-wedlock childbearing, and other dimensions.

Second, lowest-low fertility countries are themselves heterogeneous and cluster into two distinct patterns. On the one hand, lowest-low fertility countries in Southern Europe, especially Italy and Spain, exhibit latest-late home-leaving behaviour, a limited spread of non-marital cohabitation, a low proportion of extramarital births, a limited diffusion of divorce, and a relatively low proportion of women participating in the labour force. They also exhibit a more marked postponement of first births and less recuperation of fertility at higher ages. On the other hand, Central and Eastern European countries, represented in our analyses by Bulgaria and the Czech Republic, exhibit relatively earlier household independence and union formation. They also have higher non-marital fertility and divorce rates, and first births in these countries take place earlier than in the lowest-low fertility countries in Southern Europe.

Third, many behavioural patterns characteristic of lowest-low fertility countries have been subject to remarkably little convergence, and our analyses suggest that many of the above characteristics of lowest-low fertility countries, and their differences with other European or developed countries, are subject to path-dependent evolution and are thus likely to persist in the near future and medium-term future.

Fourth, the emergence of lowest-low fertility during the 1990s has been accompanied by a disruption or even a reversal of many well-known relationships that were used previously to explain cross-country differences in fertility patterns. For instance, in the period 1975–99 in European countries, cross-sectional correlations with total fertility were reversed for *TFMR*, the proportion of extramarital births, and *FLFPR*. Also, by the end of the 1990s there was no longer evidence that divorce levels were negatively associated with fertility levels. In short, *before* and *after* the emergence of lowest-low fertility, crucial changes occurred in the relationship between fertility and its traditional determinants, such as marriage, divorce, home-leaving, and women's labour force participation. Further, and perhaps most importantly, there is a clear indication that a high prevalence of marriage and institutionalized long-term partnership commitments are no longer associated with higher fertility in cross-sectional comparisons.

While the detailed analysis of the determinants of the reversal is beyond the scope of the present paper, one fundamental cause is probably beyond dispute: the reversal in cross-sectional associations between fertility and related behaviours is in part due to the different demographic factors driving fertility change. Initially, the decline towards low fertility has been importantly related to stopping behaviour, that is, a reduction of higher-parity births. More recently, the postponement of fertility—particularly for first births—has emerged as a crucial determinant of differences in fertility level among developed countries.

Appendix

Table A1 Total fertility, total first marriage ratio (*TFMR*), total divorce ratio (*TDR*), and proportion of extramarital births in European countries

	Total fertility		Total first marriage ratio		Total divorce ratio		Proportion of extramarital births (%)	
	1975	1999	1975	1999	1975	1999	1975	1999
Albania	4.37	2.10	0.79	–	0.12	–	–	–
Austria	1.83	1.32	0.75	0.53	0.20	0.41	13.5	30.5
Belarus	2.20	1.29	–	0.74	–	0.55	7.4	17.8
Belgium	1.74	1.61	0.89	0.50	0.16	0.44	3.1	–
Bosnia-Hercegovina	2.38	1.21	–	0.75	–	–	5.6	10.1
Bulgaria	2.22	1.23	1.00	0.53	0.15	0.19	9.3	35.1
Croatia	1.92	1.38	0.82	0.69	–	0.13	4.9	8.2
Czech Republic	2.40	1.13	0.99	0.48	0.30	0.32	4.5	20.6
Denmark	1.92	1.73	0.67	0.67	0.36	0.42	21.7	44.9
Estonia	2.04	1.24	0.94	0.37	–	0.49	15.7	54.0
Yugoslavia	2.33	1.62	0.81	0.59	0.14	–	9.9	20.2
Finland	1.68	1.74	0.70	0.58	0.26	0.51	10.1	38.7
France	1.93	1.79	0.86	0.58	0.17	–	8.5	41.7
Georgia	2.52	1.56	–	0.43	–	0.07	0.2	30.9
Germany	1.48	1.36	0.81	0.59	0.25	0.39	8.5	22.1
Greece	2.32	1.28	1.16	0.71	0.05	0.16	1.2	3.9
Hungary	2.35	1.29	1.00	0.46	0.28	0.39	5.6	28.0
Iceland	2.65	1.99	0.79	0.62	0.26	0.35	33.0	62.4
Ireland	3.43	1.88	0.94	–	–	–	3.7	30.9
Italy	2.21	1.23	0.95	0.62	0.03	0.08	2.6	9.2
Latvia	1.96	1.18	1.01	0.40	0.52	0.32	11.7	39.1
Lithuania	2.18	1.35	1.01	0.55	–	0.40	6.2	19.8
Luxembourg	1.55	1.73	0.80	0.53	0.10	0.48	4.2	18.6
Macedonia	2.71	1.76	0.92	0.84	–	–	6.6	9.8
Malta	2.17	1.72	–	–	–	–	–	10.1
Moldova	2.52	1.39	–	–	–	0.25	8.0	16.6
Netherlands	1.66	1.65	0.83	0.60	0.19	0.37	2.1	22.7
Norway	1.98	1.84	0.80	0.52	0.21	0.40	10.3	49.1
Poland	2.26	1.37	0.93	0.66	0.15	0.16	4.7	11.7
Portugal	2.75	1.49	1.38	0.80	0.02	0.24	7.2	20.8
Romania	2.60	1.30	0.97	0.66	0.21	0.21	3.5	24.1
Russian Federation	1.97	1.17	1.03	–	0.38	0.50	10.7	27.9
Slovak Republic	2.53	1.33	0.94	0.54	–	0.27	5.2	16.9
Slovenia	2.17	1.21	0.99	0.48	0.15	0.20	9.9	35.4
Spain	2.79	1.20	1.05	0.61	–	–	2.0	16.3
Sweden	1.77	1.50	0.63	0.46	0.50	0.53	32.8	55.3
Switzerland	1.61	1.48	0.65	0.66	0.21	0.50	3.7	10.0
Ukraine	2.02	1.10	–	–	0.34	0.40	8.8	17.4
United Kingdom	1.81	1.68	0.87	0.53	0.28	0.43	9.0	38.8

Source: Council of Europe (2001).

Table A2 Correlation between total fertility and indicators of marriage, divorce, extramarital fertility, and women's labour force participation across European countries

	Observations weighted by population size[1]		Unweighted	
	Correlation	Significance	Correlation	Significance
Correlation of transformed total fertility[2] with:				
Total first marriage ratio, 1975 (Figure 1(a))	0.69	***	0.41	**
Total first marriage ratio, 1999 (Figure 1(b))	–0.15		0.16	
Total divorce ratio, 1975 (Figure 1(c))	–0.46	**	–0.29	
Total divorce ratio, 1999 (Figure 1(d))	0.26		0.23	
Proportion extramarital births, 1975 (Figure 2(a))	–0.34	**	–0.14	
Proportion extramarital births, 1999 (Figure 2(b))	0.65	***	0.33	**
Female labour force participation ratio, 1975 (Figure 3(a))	–0.61	**	–0.46	*
Female labour force participation ratio, 1996 (Figure 3(b))	0.81	***	0.49	*
Correlation of total fertility levels with:				
Total first marriage ratio, 1975 (Figure 1(a))	0.67	***	0.32	*
Total first marriage ratio, 1999 (Figure 1(b))	0.21		0.07	
Total divorce ratio, 1975 (Figure 1(c))	–0.47	**	–0.29	
Total divorce ratio, 1999 (Figure 1(d))	0.27		0.24	
Proportion extramarital births, 1975 (Figure 2(a))	–0.36	**	–0.15	
Proportion extramarital births, 1999 (Figure 2(b))	0.66	***	0.36	**
Female labour force participation ratio, 1975 (Figure 3(a))	–0.63	***	–0.47	*
Female labour force participation ratio, 1996 (Figure 3(b))	0.79	***	0.47	*

*$p \geq 0.10$; **$p \geq 0.05$; ***$p \geq 0.01$.
Notes: (1) Correlations are computed using the population size of a country as weight, that is, the weight is proportional to the area indicated by the circles in Figures 1–3; (2) the *transformed total fertility* is proportional to the corresponding stable population growth rate and is calculated as $r = \log(\text{total fertility} \times 0.4886)/30$ (see also Note 2 to Figure 1); the same transformation is used for the vertical axis of Figures 6–8.
Source: Council of Europe (2001).

Table A3 Cumulated first-order and overall fertility for Dutch cohorts born 1950–70

	First births by age				
	25	30	35	40	45
Cohort 1950	0.51	0.76	0.83	0.85	0.85
Cohort 1955	0.40	0.67	0.79	0.82	
Cohort 1960	0.30	0.61	0.77		
Cohort 1965	0.24	0.55			
Cohort 1970	0.19				
	Overall fertility by age				
	25	30	35	40	45
Cohort 1950	0.76	1.45	1.78	1.88	1.90
Cohort 1955	0.60	1.27	1.70	1.85	
Cohort 1960	0.45	1.13	1.65		
Cohort 1965	0.34	0.95			
Cohort 1970	0.27				

Source: Evert van Imhoff, Netherlands Interdisciplinary Demographic Institute.

Notes

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