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02 Does persistent low fertility threaten the future of European populations?

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1. Introduction

Three stylised demographic facts are nowadays taken for granted by many Europeans: First, European birth rates are very low and further declining. Second, the currently low fertility will inevitably lead to rapid population ageing and population decline in the future. Third, these trends are unsustainable in the long run and constitute serious threats to the economy, the labour market, the welfare system, and to the foundations of European societies. Politicians and demographers are particularly concerned about this perspective. In the Green Paper on “Confronting Demographic Change”, an official discussion document of the European Commission published in 2005, the low birth rate is mentioned as a “challenge for the public authorities” (p. 5) and a “return to demographic growth” as the first out of three “essential priorities” which Europe should pursue to face up demographic change. Perhaps no one summarised the fears of shrinking Europe more succinctly than Pope Benedict XVI during his Christmas address to the Roman Curia in December 2006: “...the problem of Europe, which it seems no longer wants to have children, penetrated my soul. To foreigners this Europe seems to be tired, indeed it seems to be wishing to take its leave of history” (Vatican 2006). The Pope linked this perceived lack of interest in children to several factors, which are familiar to scholars studying contemporary family and fertility change. He posited that “contemporary man is insecure about the future,” unsure about the norms and rules for life. Furthermore, he mentioned a ‘problem’ of definitive decisions, before lamenting the “relativisation of the difference between sexes”. Were he a secular person talking to a different audience, he might also have said that changed norms and values are intrinsically linked to the lack of interest in childbearing among contemporary Europeans. This argument finds parallels in the concept of the second demographic transition (SDT) whose two main protagonists, Ron Lesthaeghe and Dirk van de Kaa, have repeatedly linked the declining fertility rates observed in most regions of Europe in the 1970s and later to broad societal and cultural changes, marked by a rise of secular individualism, the quest for individual self-fulfilment, and a decline of the traditional ‘bourgeois’ family.

The fears of a population and fertility slump in Europe are not new and have been repeatedly voiced since the late 19th century (Teitelbaum and Winter 1985), especially in times when birth rates in many European societies declined rapidly. Some well-known alarmist examples in this respect are books like “The Decline of the West,” published first in 1918 by German philosopher Oswald Spengler, “The Twilight of Parenthood,” published in 1934 by Enid Charles, a lecturer at the London School of Economics (and later republished under the title “The Menace of Under-population”) and Debré and Sauvy’s (1946) laments about the aged, sclerotic, and shrinking French population. A new wave of such publications has come up since the 1970s, concomitant to the rapid decline in fertility rates in most European societies. Already in 1984,

the European Parliament passed a resolution calling for “measures to combat this marked trend towards population decline, which is common to all the member states” (by then comprising ten countries; PDR 1984). And even in the United States, where fertility rates are well above those of any larger country of Europe except France, books such as “The Empty Cradle” by Philip Longman (2004) warn of rapidly ageing societies challenged by the loss of economic prosperity and innovativeness. Jean-Claude Chesnais, a prominent French demographer, in 2001 suggested that after experiencing the population explosion of the 20th century, the 21st century might be a period when mankind will experience a population implosion, and this implosion may be particularly pronounced in Europe.

Should these renewed fears of childless, aged and shrinking societies be renounced as unwarranted and exaggerated, similar to those painting a gloomy portrait of European population decline just a few decades before the baby boom of the 1950s and 1960s took place? There are many good reasons to be seriously concerned about the future fertility and population trends in Europe. In contemporary European societies voluntary childlessness is commonly accepted as a lifestyle choice, whereas large family sizes have become unusual. Many countries have experienced several decades of very low fertility levels and some have already seen extended periods of population decline (Eurostat 2006a). Three-quarters of Europeans in 2005 lived in countries with period total fertility rates (TFR) below 1.5 (Eurostat 2007). Today we have at our disposal better data, analytical tools and projection methods that avoid many errors that were inherent in the first forecasts done more than half a century ago. And contemporary projections do support many fears commonly voiced about Europe’s demographic future. The population momentum inherent in the current age structure that has developed during the previous decades of low fertility will eventually bring negative rates of natural increase in most European countries and in Europe as such (Lutz, O’Neill and Scherbov 2003). Likewise, a relatively rapid population ageing will inevitably occur in the coming decades and the official projection of Eurostat (2006c) envisions that the European population will start shrinking after 2025. Working-age population is also projected to decline rapidly. On a global scale, a demographic marginalisation of Europe is well underway (Demeny 2003) and this may lead to a rapid decline in the future cultural and economic importance of Europe.

Yet, despite this list of likely demographic troubles to come, which could be further expanded, there are also reasons for a less gloomy evaluation of some current and the likely future population trends in Europe. This contribution focuses on selected trends and cross-country differences in fertility, many of which are commonly seen as the main ‘causes’ of the envisioned future demographic decline of Europe. In addition, the article assesses the importance of observed fertility trends in conjunction with migration which has a rising influence on European population. It does not attempt

to provide a comprehensive review of all the important changes in fertility in different parts of Europe and the factors behind them—such an overview would be excessively large and would repeat much of the valuable analysis provided in a number of other publications (e.g., Engelhardt and Prskawetz 2004; Lesthaeghe and Moors 2000; Kohler, Billari and Ortega 2002; Morgan 2003; Billari and Kohler 2004; Sobotka 2004a; Billari 2005; Frejka and Sardon 2004; Morgan and Taylor 2006). Instead, I look at selected important developments and factors which have been rather neglected in contemporary literature on European fertility but which are important for our assessment of future fertility trends. In doing so, I pay little attention to a number of factors affecting fertility which are well represented in recent studies, among them the topics of women's labour participation, family policies, gender equality and reconciliation of work and childbearing, the influence of welfare state regimes, and the effects of education on fertility (some of them are discussed in the concluding section). To further narrow down the scope of this contribution, I also omit the discussion on the specific factors affecting fertility trends in the former Communist societies during the transformation period after 1989 (see chapters 7-8 in Sobotka 2004a).

Throughout this paper I aim to pursue the following hypotheses:

- Extremely low period total fertility rates, observed at present in many parts of Europe, are linked to the rapid postponement of childbearing, and are likely to be temporary;
- Very low fertility rates are often related to economic, cultural and institutional constraints which may be reduced in the future;
- The second demographic transition is closely linked to fertility postponement, but not necessarily to below-replacement fertility level;
- Pronounced differences in low fertility are characteristic of contemporary Europe and are likely to prevail;
- If migration is taken into account, population replacement rates are close to the threshold necessary for stable or increasing population in most regions of Europe;
- Therefore, very low fertility and the threat of marked population decline constitute a regional problem rather than a threat for the whole of Europe.

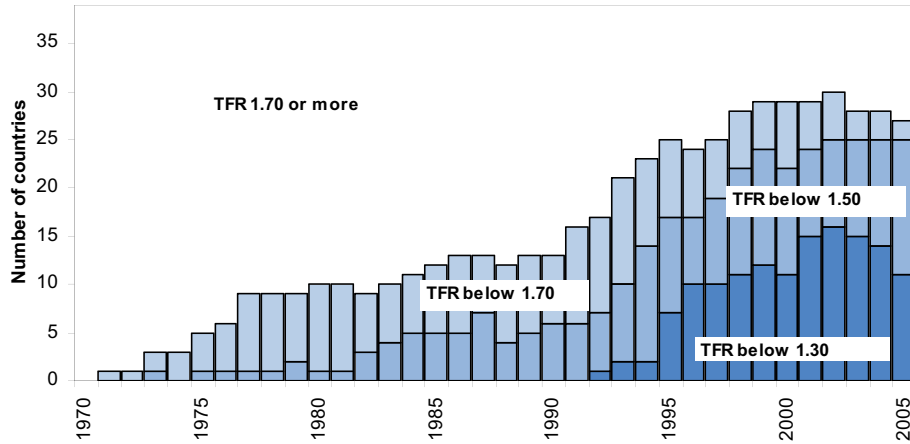
Overall, this contribution argues that the occasionally predicted spiral of declining number of births and declining population size is not an inevitable future of European population, especially when the European Union as a whole is considered. While some regions are likely to experience considerable and long-lasting population decline, other regions may see continuing population increase, extended well beyond the mid-21st century. A slight increase in fertility combined with relatively high immigration may be the major factors to bring about such developments.

This article is structured as follows. The second section analyses the recent spread of low and lowest-low fertility in Europe and outlines the persistent trend towards delayed childbearing. Selected insights from cohort analysis are used to illustrate the long history of sub-replacement fertility and the variability in contemporary low fertility in Europe. The third section reviews changes in the family context of childbearing and discusses the effects of union instability, the decline of marriage as well as the suggested retreat from fatherhood, on fertility. The fourth section shows that the second demographic transition has become positively linked to fertility in a cross-country perspective. The fifth section assesses the importance of migration for European fertility and the role of migration for sustaining population size in many European countries. The final section discusses the current positive association between the second demographic transition and fertility, summarises reasons why European fertility rates might increase in the future, and reiterates the importance of migration for European population trends.

2. Selected trends and features of contemporary fertility in Europe

2.1. The spread of low and very low fertility in Europe

Trends in the most commonly used indicator of period fertility—the total fertility rate (TFR)—seem to leave little doubt about the unprecedented extent of currently very low fertility in Europe. In 2005, 25 out of 39 European countries with population above 100,000 recorded TFR below 1.5 (see Figure 1). These countries represent almost three quarters of the European population. All countries of Europe reached below-replacement fertility, with the TFR lower than 2.0. In comparison, no European country had a period TFR below 1.7 in 1970. Furthermore, since the early 1990s, an increasing number of countries of southern and central-eastern Europe experienced a decline of the period TFR towards the 'lowest-low' levels below 1.3 (Kohler, Billari and Ortega 2002). This trend has culminated in 2002, when one-half of Europeans lived in societies with such low TFR levels.



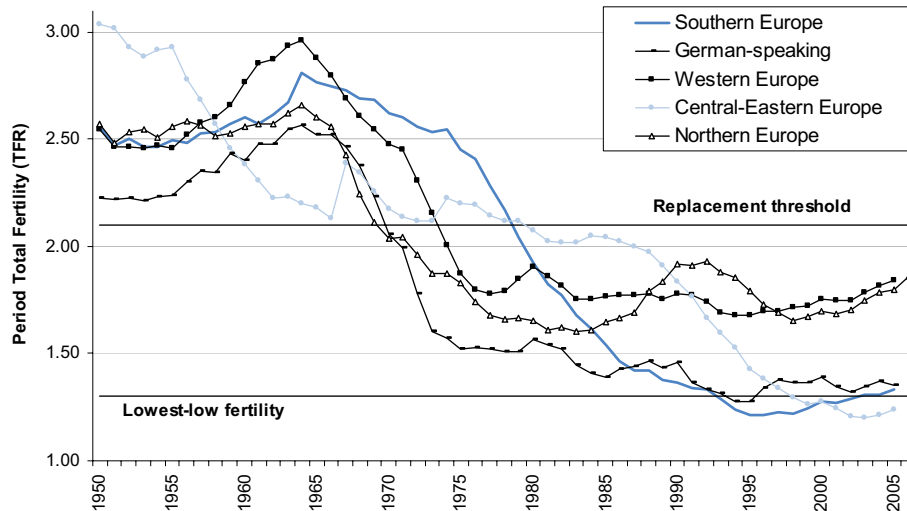
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Figure 1: Number of European countries with the period TFR below 1.7, 1.5 and 1.3 in 1970-2005 (out of 39 countries with population above 100,000)

Source: Computations based on Eurostat (2007) and Council of Europe (2006).

Note: Montenegro and Kosovo counted as a part of the former republic of Serbia-Montenegro

This general picture may be misleading, however. Extreme low levels of the period TFR are closely associated with a rapid postponement of parenthood towards higher reproductive ages and are likely to be temporary (see section 2.3 below). Furthermore, contemporary low fertility in Europe is regionally differentiated. Many countries of western and northern Europe that had experienced rapid falls in the TFR below 2.0 already in the early 1970s subsequently retained the TFR relatively close to this threshold, with a recent increasing tendency (Figure 2). France stands out as the only larger European country that recorded a rise in the TFR to 2.0 in 2006. In contrast, German-speaking countries (Austria, Germany and Switzerland), southern Europe and, most recently, countries of central-eastern Europe have seen much deeper falls in the period TFR. Numerous cultural, institutional and economic factors have been proposed to explain these regional divides (Esping-Andersen 1999; Caldwell and Schindlmayr 2003; McDonald 2000; Rindfuss, Guzzo and Morgan 2003; Adsera 2004; Billari and Kohler 2004). Nevertheless, a proper understanding of the emerging cross-country differences in fertility rates cannot be achieved with crude and rather simplistic measures such as the TFR. Cross-country diversity needs to be assessed with parity-specific period and cohort fertility rates, which are briefly analysed in section 2.4 below.



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Figure 2: Period total fertility rate in European regions, 1950-2006

Source: Computations based on Eurostat (2007), Council of Europe (2006), Festy (1979), Chesnais (1992) and national statistical data.

Notes: Data are weighted by population size of given countries and regions.

Countries are grouped into regions as follows:

Western Europe: Belgium, France, Ireland, Luxembourg, the Netherlands, United Kingdom;

German-speaking countries: Austria, Germany, Switzerland;

Northern Europe: Denmark, Finland, Iceland, Norway, Sweden;

Southern Europe: Cyprus, Greece, Italy, Malta, Portugal, Spain;

Central-eastern Europe: Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Bosnia-Herzegovina, Bulgaria, Macedonia, Montenegro, Romania, Serbia (recent data exclude Kosovo).

2.2. Persistent delay of childbearing and rising social status heterogeneity in first birth

Lesthaeghe and Moors (2000) have suggested that the postponement of parenthood has become the hallmark of the second demographic transition. Whereas many interrelated social, economic and lifestyle changes have been identified as the driving forces of the shift towards delayed entry into parenthood (Sobotka 2004a, chapter 2), late childbearing also constitutes a strategy that is consistent with the expected decline in the relative importance of children and family life for individuals' self-realisation. Initiated in the early 1970s in western and northern Europe, the shift towards later parenthood had reached all corners of Europe by the late 1990s. Women in Greece,

Italy and Spain and most countries of western and northern Europe give birth to their first child at ages 28-29 on average, up from age 24-25 in the early 1970s (Figure 3). The overall mean age at childbearing has surpassed 30 in the majority of these countries. The frequency of 'late' births (births to women over age 40) has increased sharply since the late 1980s, especially in the case of first births, bringing a reversal to the long-standing downward trend initiated by the first demographic transition (Sobotka, Kohler and Billari 2007). At the same time, the pace of first-birth postponement has been slowing down since the late 1990s in all parts of Europe except the post-communist countries of central-eastern Europe where childbearing postponement has become particularly pervasive. Although young cohorts of women in northern, western and southern Europe do not show signs of much additional delay of childbearing, there is still scope for a further shift towards later parenthood (Goldstein 2006): most women can fulfil a typical desire for a two-child family even when they have a first child after age 30.

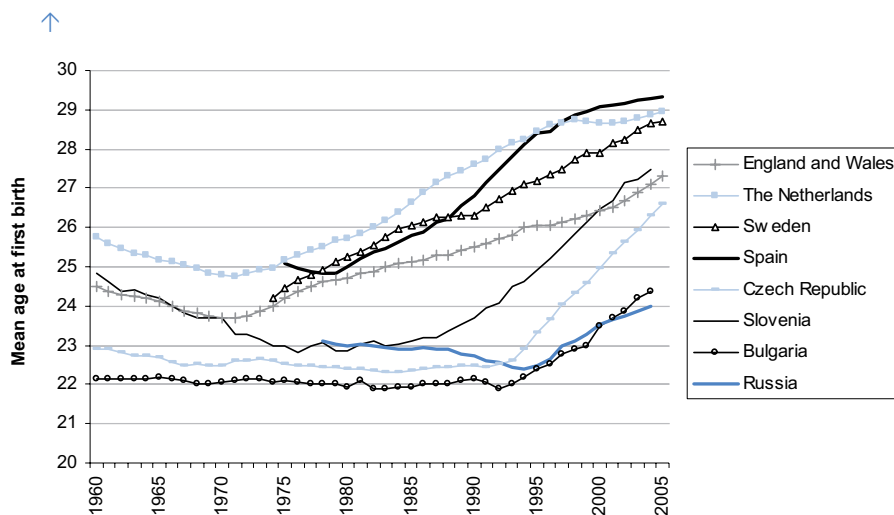


Figure 3: Mean age of mother at birth of first child, selected countries of Europe (1950-2005)

Source: Computations based on Eurostat (2007), Council of Europe (2006), Smallwood (2002), Vishnevski (2006) and national statistical data.

Not all social groups have postponed parenthood to the same extent: women with tertiary education have frequently shifted birth of their first child after the age of 30, whereas women with low qualification usually give birth to their first child at an early age, often as teenagers (McLanahan 2004). The resulting rise of social status heterogeneity in the timing of first birth has been most pronounced in countries with 'liberal' welfare regimes that are characterised by larger social disparities—England and Wales, Ireland and, outside Europe, in the United States (Sobotka 2004a: Table 3.5). This trend is a part of a broader shift towards the 'polarisation' in the timing and pathways to parenthood (Ravanera and Rajulton 2004). McLanahan (2004) argues that the increasing divergence in partnership, family, and work trajectories of low-educated and highly educated women and their partners is linked to an increasingly disadvantaged economic position of the former group.

2.3. Delayed childbearing and very low fertility

Fertility postponement negatively affects both the observed number of births and the commonly used fertility indicators as some of the births that would have been realised in a given period were put off into the future. This distortion, frequently called 'tempo effect' is temporary and persists only as long as the shift in fertility timing takes place. However, contemporary progression of delayed parenthood is unique in its intensity and duration—in some countries continuing for more than three decades. Not surprisingly, there are sceptical voices suggesting that the envisioned 'recovery' in period fertility may not take place. For instance, McDonald (2006: 487) noted that waiting for the tempo effect to disappear is "beginning to look like waiting for Godot." The possibility that the end of fertility postponement may not be linked to a notable rise in period fertility rates cannot be ruled out: Bongaarts (2002) outlines a scenario in which a parallel decline in the underlying fertility level may erase most of the gains associated with the ending of fertility postponement.

However, recent experience of many advanced societies shows that the cessation, or slowing down, of childbearing postponement, as reflected in the stabilization of the mean age at first birth, is linked to a significant rise in the ordinary TFR. The decline in the intensity of fertility postponement after 2000 is probably the main factor explaining the recent modest increase in the TFR in many countries of Europe. But how much can the TFR increase once the postponement stops in all parts of Europe? Lesthaeghe and Willems (1999) emphasised that it is highly unlikely that total fertility would bounce back to the replacement level. On the low side of fertility spectrum, my analysis (Sobotka 2004b) suggested that the end of fertility postponement in the countries with the lowest-low period TFR below 1.3 would probably bring an increase above this level in all parts of Europe. Table 1 presents an update of this analysis, using estimates of the adjusted TFR proposed by Bongaarts and Feeney (1998) and computed by the Vienna

Institute of Demography for the period 2001-2003 (VID 2006). This method estimates the period TFR that would have been achieved in the absence of tempo effects. Because the adjusted TFR is based on several assumptions and may fluctuate considerably for individual countries, I provide a summary of results for different regions of Europe and do not show data for individual countries.¹

Table 1: Period TFR and tempo-adjusted TFR in European regions, 1995-2000 and 2001- 2003

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	Population size, mill.	TFR		Adjusted TFR [Bongaarts-Feeney]		Cohort TFR
		1995-2000	2002	1995-2000	2001-2003 or most recent	
Western Europe	149.3	1.71	1.75	1.88	1.92	2.02
Northern Europe	24.3	1.70	1.70	1.94	1.96	2.00
German-speaking countries	97.8	1.35	1.32	1.52	1.53	1.67
Southern Europe	120.4	1.23	1.28	1.59	1.43	1.74
Central-eastern Europe	77.6	1.40	1.25	1.74	1.66	2.10
South-eastern Europe	43.7	1.43	1.33	1.67	1.64	2.14
Eastern Europe	205.8	1.25	1.25	1.46	1.45	1.85
EU-15	378.6	1.47	1.49	1.70	1.67	1.84
EU-12 new (2004 & 2007)	104.1	1.36	1.24	1.67	1.63	2.10
EU-27	482.6	1.45	1.44	1.69	1.66	1.89
Europe	722	1.46	1.39	1.63	1.61	1.89

Source: Computations based on VID (2006), Eurostat (2007), Council of Europe (2006), Sobotka (2004b) and national statistical data.

Notes: Data are weighted by population size of given countries and regions. Countries are grouped into regions as follows: Eastern Europe: Belarus, Moldova (excluding Transnistria),

1 Among various adjustment methods, Bongaarts-Feeney's adjustment is the least data intensive and easiest to compute. Various papers have discussed or questioned its results and theoretical assumptions (e.g., Lesthaeghe and Willems 1999; van Imhoff 2001). Given the limited data availability for computing more sophisticated indicators, I consider this indicator a reasonably good approximation of fertility quantum, especially when summarised for longer time periods or for regions broader than individual countries. The relative stability of this measure between 1995-2000 and 2001-2003 in most regions of Europe lends support to this argument.

Russia (including Asian part), Ukraine.

Central-eastern Europe: Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia.

South-Eastern Europe: Bosnia-Herzegovina, Bulgaria, Macedonia, Montenegro, Romania, Serbia (except Kosovo).

For other regions see Figure 2.

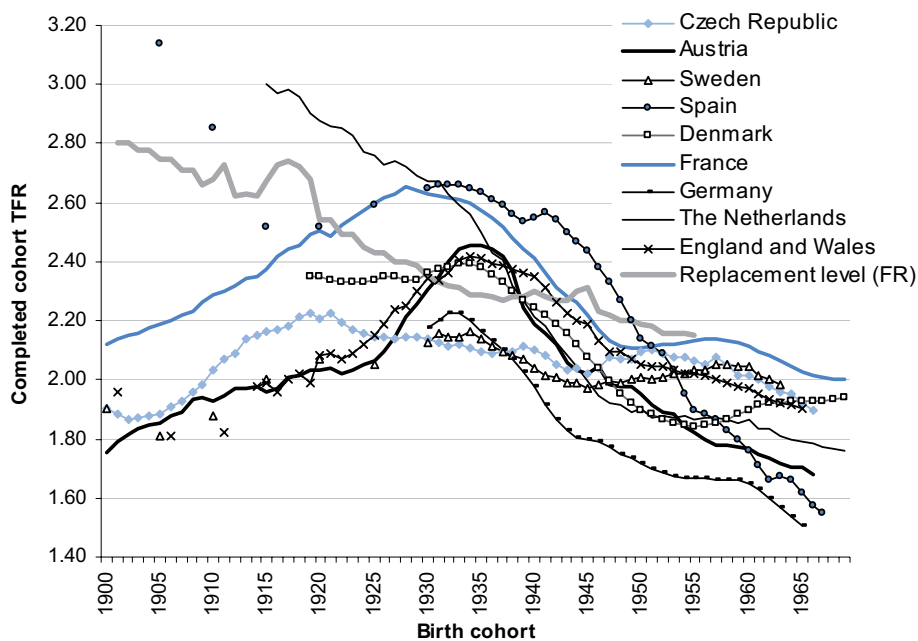
The Table shows much stability in both the ordinary TFR and the adjusted TFR during the analysed period (more recently the TFR has increased in most regions, see Figure 2). While the TFR further declined in the former communist countries of central-eastern and eastern Europe, the adjusted TFR declined in southern Europe and central-eastern Europe. The European Union (27 countries) had the adjusted TFR at 1.66 in 2001-2003, with both old members (EU-15) and the new member states recording very similar levels. This contrasts with the ordinary TFR which—due to intensive fertility postponement—is much lower in the new member countries that accessed the EU in 2004 and 2007 (1.24). The Table also corroborates previous findings on regional fertility contrasts in Europe. Northern and western European countries have the highest levels of both TFR and adjusted TFR, with the latter reaching above 1.9. Remarkably, the adjusted TFR in these regions comes relatively close to the replacement level as well as to the cohort TFR of women born in 1960 (2.0 on average). This suggests that fertility quantum has been relatively stable there in the last two decades. In contrast, eastern European countries of the former Soviet Union, southern Europe and the German-speaking countries of central Europe have a much lower adjusted TFR, hovering at or slightly below 1.5 in 2001-2003.

2.4. Completed fertility and parity progression ratios

Long-term data on cohort fertility put period fertility trends into a broader perspective. Figure 4, comparing completed fertility of women born since the early 20th century in selected countries of Europe, brings a number of important observations:

- Low completed fertility is not a new phenomenon emerging with the second demographic transition. At least four out of nine countries shown in Figure 4—Austria, Czech Republic, England and Wales and Sweden—achieved low cohort fertility (below 2 children per woman) among the early 20th century cohorts. In England and Wales and in Sweden, women born in the early 1960s reached higher completed fertility than the cohorts of their grandmothers born in 1905-1910;
- Relative to the replacement level threshold, cohort fertility rates of women born in the first two decades of the 20th century were lower than among those born in the 1960s in many countries of Europe. For instance, the ratio of observed cohort TFR to the replacement-level cohort TFR was 0.76 in France in the 1901 cohort, but 0.96 in the early 1960s cohorts (replacement-level cohort TFR for France is plotted in Figure 4);

- Although a majority of European countries experienced a significant fall in completed TFR among women born during the 1950s and 1960s (Frejka and Sardon 2004), there are several interesting cases that do not conform to this trend: Completed TFR of Danish women has increased slightly in the post-1955 cohorts, whereas French women born in the early 1970s are projected to achieve a stable fertility level of 2.0 (Prioux 2006). On the other hand, women in southern Europe experience a particularly pronounced decline in their completed fertility and German women born in the early-1960s have seen a fall in completed TFR below 1.6.



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Figure 4: Completed fertility in selected countries of Europe (cohorts 1900-1968) and replacement-level fertility in France

Sources: Festy (1979), Sardon (1991), Frejka and Sardon (2004), INSEE (2007) and own computations based on Eurostat (2007) and national statistical data.

Admittedly, women born in the early 20th century experienced low fertility rates due to a combination of several factors (especially the First World War and the economic depression of the 1930s) that negatively affected their partner choice and their economic circumstances. Although this early emergence of sub-replacement fertility in Europe was closely linked to negative economic conditions (see, however, Van Bavel

2007), it also shows that under such circumstances many women and men were 'ready, willing and able' to reduce their family size to one child or abstain from having children altogether well before the onset of the second demographic transition.

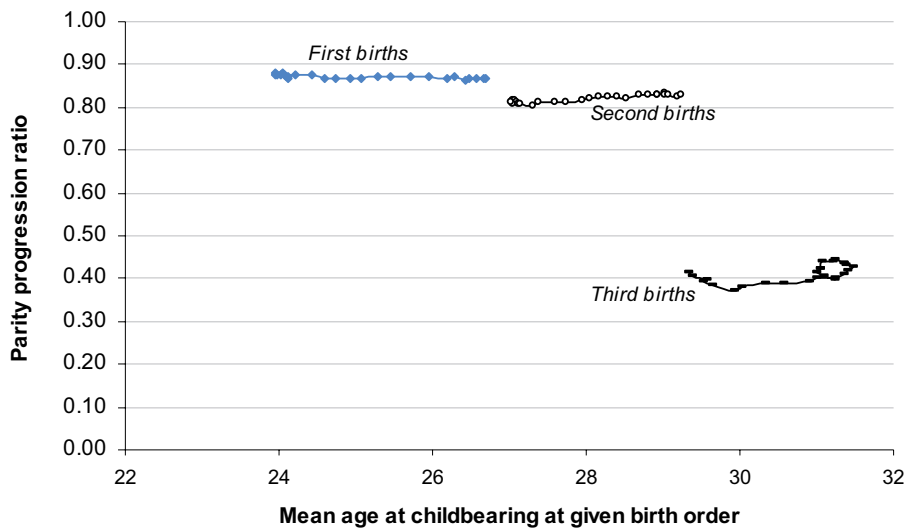
Low fertility in the early 20th century cohorts was not achieved through a universal spread of low fertility: family size distribution varied greatly and both very small and large families were relatively common. In Austria, for instance, almost one-half of the women born in 1910 had no child or one child only, whereas 28 per cent of women had three or more children (data based on the 1991 Population Census). In contrast, the current low fertility is linked to a low prevalence of 'large' families (3 and more children), a strong adherence to a two-child family norm (e.g., Shkolnikov et al. 2007), and a gradual increase in the proportion of childless women and women with one child. Although childlessness has gradually increased in almost all European countries and this increase is likely to continue among women born in the 1970s (Sobotka 2005), most of the cross-country differences in completed fertility are due to differences in second-birth progression rates rather than due to an increasing rejection of parenthood. Most countries with low or rapidly declining completed fertility also have low progression rates after the first child (Billari and Kohler 2004). This pattern is typical of southern Europe, many ex-Communist countries of central and eastern Europe, and the Balkan countries. Only German-speaking countries do not fully adhere to this pattern: there, relatively low cohort fertility is closely linked to high childlessness,² but not to particularly low second and third-birth rates. Third-birth rates, which had been declining in all parts of Europe for many decades, recently appear to stabilise or even increase slightly in some countries of western and northern Europe, partly fuelled by the rising share of immigrants with higher fertility preferences (see also section 5 below).

It is notable that many countries of northern and western Europe manifest relatively high second-birth rates combined with a persistent preference for a family with two to three children (e.g., Testa 2006). Another remarkable feature is the apparent absence of the postponement-quantum effect in several countries that have experienced fertility delay since the early 1970s. At an individual level, later age at first birth is negatively associated with completed fertility (Toulemon 2004a) as women face declining fecundity rates, especially past age 35 (Menken 1985). A simulation model by Billari and Borgoni (2005) demonstrates that first-birth postponement leads to a rapid decline in the predicted second-birth progression rates and has a negative effect on overall completed fertility rates, especially at the 'lowest-low' fertility levels. In view of these findings it is surprising that several countries with intensive fertility delays have

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² Childlessness is especially high in West Germany, probably reaching above 25 percent among the mid-1960s and younger cohorts (Engstler and Menning 2003; Duschek and Wirth 2005)

not experienced a decline in second-birth rates for the cohorts born in the 1950s and 1960s. In Sweden, for instance, there was no detectable tempo-quantum effect on first, second, or third-birth rates for the cohorts of 1940-65 (Figure 5). Similar findings were also reported for Denmark, France (Toulemon and Mazuy 2001) and for second-birth rates in Austria (Prskawetz et al. 2008). In these cases, the decline in fertility rates due to postponement was counterbalanced by an increase in childbearing intensity among women past age 30. The negative effects of postponement may become more visible among younger cohorts that have further shifted childbearing to a later age. An absence of such an effect in some countries suggests that other factors than postponement were decisive in pushing second-birth rates downwards in southern Europe and elsewhere and that the decline in completed fertility observed in most countries of Europe cannot be explained by fertility postponement.



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Figure 5: Age at childbearing by birth order and parity progression ratios among women in Sweden born in 1940-65

Source: Author's computations based on Johansson and Finnäs (1983) and Eurostat (2007).

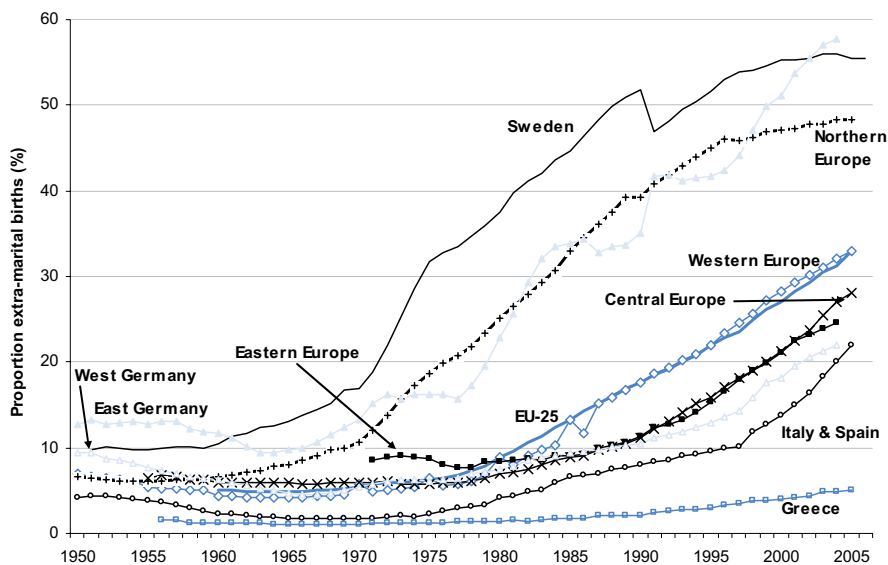
3. Women, men and childbearing: do family and partnership changes negatively affect fertility?

3.1. Changing living arrangements, family instability and the rise of non-marital childbearing

The postponement of entry into marriage and the decline in the proportion of people marrying are coupled with the rise of cohabitation and single living among younger persons and, in some countries, also with a delayed leaving from the parental home (Billari and Wilson 2001; Corijn and Klijzing 2001). Together with the growing instability of partnerships and unions these developments are among the behavioural cornerstones of the second demographic transition. The rise of cohabitation, documented in detail for western and northern Europe (e.g., Prinz 1995; Nazio and Blossfeld 2003; Kiernan 2004), is particularly illustrative: the prevalence of cohabitation differs between societies, but also across ages and various social groups. Among people below age 35, cohabitation has become more widespread than marriage in most western and northern European countries (Kiernan 2004: Figure 1). Heuveline and Timberlake (2004) show how the prevailing character of informal unions ranges from a relatively marginal phenomenon such as in Poland or a prelude to marriage (e.g., in Switzerland) to an alternative to marriage (e.g., in France) or a status, which has become undistinguishable from marriage (Sweden). The importance of cohabitation for childbearing depends on the extent to which cohabitation becomes a substitution for marriage and thus widely accepted and regarded as a childbearing institution (Heuveline and Timberlake 2004). The growing instability of both formal and informal unions has been one of the major forces contributing to the spread of solo parenting in many advanced societies (Heuveline, Timberlake and Furstenberg 2003).

The disconnection of childbearing from marriage is most clearly illustrated by a steep rise in the proportion of non-marital births over the last three decades which, after reaching historically low levels in the 1950s and 1960s took place since the early 1970s (earlier in northern Europe, see Figure 6). This change has accelerated in central and eastern Europe after the breakdown of the communist system in 1989 and in Italy and Spain after 1995. The recent rapid rise in extra-marital childbearing in the latter two countries may be seen as a surprise in the light of the persistent importance of marriage and traditional family bonds in these societies (Reher 1998; Dalla Zuanna 2001). It is linked to the recent rise in cohabitation (see Rossina and Fraboni 2004 for Italy), but also to an influx of immigrants from the countries where extra-marital childbearing is common (see Delgado, Meil and Zamora López 2008 for Spain). In most societies where childbearing outside wedlock had remained rare until recently, such as Belgium, Italy, or Poland, it has become a common phenomenon now. Only in Cyprus and Greece extra-marital births remain marginal, accounting for 4-5 per cent of all births in 2005. Moreover, a growing number of countries and regions register a majority

of births taking place outside marriage: in 2005, Estonia, Iceland, Norway, Sweden as well as former GDR (East Germany) were in this group, whereas Bulgaria, France and Slovenia are likely to exceed the 50 per cent threshold soon as well.³ Especially first births frequently take place outside marriage. In total, one-third of all births in the EU-25 occurred outside marriage in 2005, up from 5 per cent during the 1960s, and 18 per cent in 1990. Since 1980 this proportion has been rising steadily by about 1 per cent per year, so far without any sign of slowing down. However, if northern Europe shows the likely future trend, it reminds us that there are also limits to this increase: having reached about half of all births outside marriage, most Nordic countries experienced a stabilisation in this proportion since the late 1990s.



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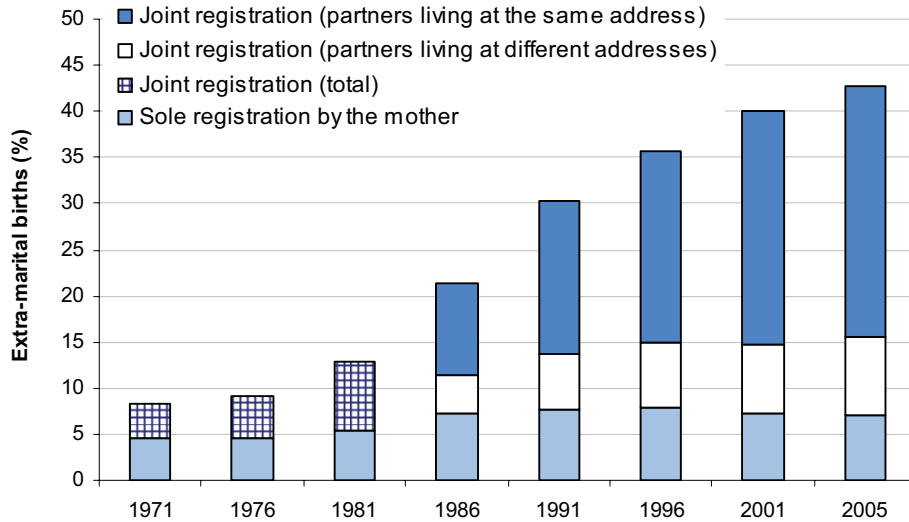
Figure 6: Proportion of children born outside marriage in selected countries and regions of Europe (1950-2005)

Sources: Council of Europe 2006, Eurostat 2006a and 2006b, Grünheid 2006.

3 Country-specific trends in non-marital childbearing conceal huge regional diversities, the roots of which frequently date back to the first demographic transition (Lesthaeghe and Neels 2002). Probably the most peculiar example of path-dependent persistence of two widely different patterns is the case of East and West Germany after German unification, when the proportion of non-marital births in East Germany, already high in 1989 (34 %) further skyrocketed and reached 58 % in 2004, contrasting with 22 % in West Germany (Grünheid 2006 (data exclude the Berlin region); see also Konietzka and Kreyenfeld 2002 and Sales 2006).

Note: Countries are grouped into regions as follows: Western Europe: Austria, Belgium, France, Germany, Ireland, Luxembourg, the Netherlands, Switzerland, United Kingdom. Northern Europe: Denmark, Finland, Iceland, Norway, Sweden. Eastern Europe: Belarus, Moldova (excluding Transnistria), Russia (including Asian part), Ukraine. Central Europe: Croatia, Czech Republic, Hungary, Poland, Slovakia, Slovenia.

Childbearing outside marriage covers various family forms, which have different implications for economic position and well-being of parents and their children (Heuveline, Timberlike and Furstenberg 2003; Kiernan 2004). In north-western Europe most extra-marital births are planned, intended by both parents and take place within the context of stable cohabiting unions. In Sweden, where the proportion of extra-marital births has been the second highest in Europe for many decades (after Iceland), only around one-tenth of births occur to single mothers and many couples marry after having their first or second childbirth (Oláh and Bernhardt 2008). In contrast, in central and eastern Europe a large portion of extra-marital births occurs to single mothers (Heuveline, Timberlike and Furstenberg 2003). Coleman 2006a posits that such patterns are partly fuelled by specific welfare policies providing support to single mothers (see also Gonzáles 2005). Data for England and Wales (Population Trends 2006) give a glimpse at the diversity of extra-marital childbearing over time (Figure 7). In times when extra-marital childbearing was rare, it was typically linked to solo motherhood; in 1971 only 8.4 per cent of all births in England and Wales were realised by unmarried women, but a majority of them took place among solo mothers. This pattern was documented for many parts of Europe: non-marital sexual activity often resulted in an unintended pregnancy, which led in most cases to a sudden rush to marry in order to 'legitimise' the soon-to-be-born child. In the span of one generation, cohabitation spread rapidly and childbearing outside marriage became common as well. Between 1971 and 2000 the proportion of extra-marital births in England and Wales increased five-fold, reaching 42.8 per cent. However, the absolute proportion of solo mothers remained stable over time, rising slightly between 1971 and 1986 (from 4.6 to 7.2 per cent) and hovering around that level ever since. Thus, in England and Wales as in other countries of western and northern Europe, the spectacular rise of extra-marital childbearing is mostly attributable to cohabiting couples or mothers having a non-cohabiting relationship with a partner who is ready to recognise his child. The 'normalisation' of extra-marital childbearing is also mirrored by a rising recognition of children by their fathers in other countries of Europe. In France, for instance, 92 % of children born outside marriage in 1994 were recognised by their fathers, up from 76 % in 1965 (Munoz-Perez and Prioux 2000).



↑

Figure 7: Proportion of non-marital births in England and Wales by the type of their registration, 1971-2005

Source: Own computations based on Population Trends 2006.

3.2. Partnership instability, decline of marriage and fertility

How are the rising instability of partnerships and the retreat from marriage linked to fertility trends? Should we worry that unstable partnerships will prevent many couples from having children? Paradoxically, some evidence points in the opposite direction: in many countries, partnership instability appears to be linked to the overall higher level of fertility. A cross-country analysis by Billari and Kohler (2004) revealed that the once powerful association between fertility rates, first marriage rates and divorce rates ceased to exist by the late 1990s. In fact, if any relationship could be observed between these indicators, it is the reversal of the pattern typical for the period of the 1960s through the 1980s: divorce rates are now positively associated with the total fertility rates (TFR), whereas first-marriage rates are slightly negatively associated with the TFR. In addition, the proportion of non-marital births has also become positively linked to the TFR. Although some of these associations might be temporary and spurious, it became apparent that the spread of alternative family forms and the rising divorce and partnership dissolution do not necessarily imply very low fertility. To the contrary, many countries which have advanced furthest in the decline of traditional family and the spread of less conventional and less stable living arrangements, record relatively high fertility when judged by contemporary European standards. The United Kingdom, France, Norway and Sweden share not only total fertility rates of 1.8-2.0 in 2006, but also close to one-half of all children being born outside marriage, very low marriage rates and total divorce rates approaching 50 per cent.

Expanding research on stepfamily fertility provides further evidence on the link between the formation of the second and later unions and fertility. Vikat, Thomson and Hoem (1999) found that Swedish couples want to have a shared child irrespective of how many children they have had in their previous union. Other studies concluded that the number of pre-union children does influence a couple's likelihood of having a shared child, especially if the partners already have two or more children (Buber and Prskawetz 2000), but the effect of these pre-union children is typically much smaller than the effect of their shared children (Thomson et al. 2002). In other words, both men and women have a considerably higher propensity to have another child when they form a new union—their shared child 'cements' their union and signals their commitment to each other (Griffith, Koo and Suchindran 1995). In addition, there is some tentative evidence on the increasing willingness of many couples to have a child in unstable partnership situations: Kravdal (1997: 289) reports that a substantial proportion of Norwegian couples deliberately enter parenthood "in unions that surely must be perceived as relatively likely to be broken." Motivation for motherhood may be strong also for some women who do not plan to enter a stable union, either due to their perceived inability to find a suitable partner or because of their unwillingness to enter a long-term committed relationship. Sobotka and Testa's (2008) comparative analysis found that a quarter of childless women aged 18-39 who expressed their preference for living single or having a non-cohabiting relationship also stated that they prefer this arrangement with children.

The overall net effect of increasingly unstable and complex partnership biographies on fertility remains unclear. This effect depends on a combination of many other factors than childbearing intensities in newly formed unions of couples with pre-union children. The most important factors include the proportion of divorcees who do not enter any stable union, the pace at which individuals who experienced union break-ups enter new unions and how much their previous fertility history differs from those who remained in their first parental union. Eckhard (2006) suggests that a shift towards a series of shorter, less stable, partnerships, increasing partnerlessness and the resulting increase in the number of years spent outside partnership before age 30 may partly explain declining cohort fertility in Germany. However, these effects may be country-specific. Prskawetz et al. (2003), focusing on cohorts born in the 1950s and the early 1960s, show huge cross-country differences in the proportion of women experiencing a second union as well as in the proportion of women already having a child when entering their second union. In many societies, union instability and stepfamily fertility may sustain higher-order fertility rates as many people have a strong motivation to have another child, above the usual two-child family norm, when they enter their second or third union. This hypothesis is confirmed by Prskawetz's et al. (2007) micro-simulation study of French fertility and Thomson's (2004) study of childbearing desires.

Data for Danish men born in 1960-65 illustrate the importance of multiple partner fertility for higher-order births (Table 3). A substantial fraction of Danish men with three or more children have them with two or more partners. Among a very small and select group of men having 5 or more children, a majority have children with at least two partners and one-fifth with three or more partners. Curiously, if more and more couples limit their childbearing aspirations to one child only—as it is the case in southern and eastern Europe—rising union instability may be seen as a way out of the ‘low fertility trap.’ As Billari (2005: 80) points out in a slightly provocative way, “If the rule is ‘one child per couple’, the only way to reach replacement is to have individuals experience two couple relationships!”

Table 3: Number of children among native Danish men (birth cohorts 1960-65) and the number of partners they have children with

↓

Number of children	Proportion of men	Of which having children with		
		1 woman	2 women	3+ women
0	24.5	x	x	x
1	17.0	100.0	x	x
2	38.3	92.9	7.1	x
3	15.8	78.4	20.0	1.5
4	3.6	60.8	32.0	7.2
5+	0.8	44.0	36.0	20.0
Total	100.0	67.6	7.3	0.6
Total fathers	75.5	89.5	9.7	0.8

Note: Fertility is recorded for the period through 2003; a significant portion of childbearing will be realised after that year. This will further increase the prevalence of multiple-partner fertility. No data about fathers are available for a small proportion of children (3.6 % for the children born in 1973-89).

Source: Author’s computations based on Danish registry data.

3.3. Are men to be blamed for low fertility?

Rather limited empirical evidence pertains to the notion of men's retreat from parenthood and their inadequate parental commitment, voiced occasionally in the demographic literature (Jensen 1995; Goldscheider and Kaufman 1996). In part, these arguments are grounded on the notion that men may lack sufficient 'innate' motivation for fatherhood. This may be in contrast to women, who, according to Foster (2000) have an inherited biological predisposition to nurturing behaviour, which provides a strong incentive to motherhood. Thus, once efficient contraception broke the link between sex and childbearing and the normative pressure to follow traditional family behaviour diminished, many men may be unwilling to make long-term binding commitments related to marriage and childbearing. In addition, women's emancipation and their lifelong work participation coupled with the social security net of modern welfare states liberated them from long-term dependence on male breadwinners. Men became less needed for reproduction and their diminished economic activity and deteriorating relative income at younger ages made them less attractive for marriage—at least in the US (Oppenheimer 1994; McLanahan 2004), but probably also in many parts of Europe.

This effect does not need to have a large impact on fertility as long as women are ready to have children irrespective of whether they can or cannot find a suitable partner. But since a large majority of women perceive having a suitable and committed partner as a precondition to parenthood, men's attitudes and intentions do matter. Their importance is also fuelled by the rise of a reflexive model of partnerships, where emotional communication, intimacy and sexual affection become the key elements cementing the relationship (Giddens 1992) and childbearing ceases to be a self-understandable choice. It becomes one of the options on the road to self-fulfilment (van de Kaa 2004) and thus open to mutual negotiation between partners. It can be argued that the rise of reflexive and egalitarian model of partnerships has increased men's decision-making power about childbearing and, whenever conflicting preferences between partners arise, the resistance against having a child prevails (Voas 2003). A strong support for this 'double-veto model' was found in a study by Thomson and Hoem (1998) based on Swedish data. Some other studies provide a more nuanced view: Corijn, Liefbroer and de Jong Gierveld (1996) illustrate that the influence of both partners is highly contingent on the social context in which childbearing decisions take place. In addition, Berrington's (2004) study of British panel data shows that the effect of men's disagreement may be parity-specific: for childless women in their thirties, partner's disagreement did not have a strong effect on the actual likelihood of childbearing.

Men can negatively influence women's childbearing decisions and thus also the aggregate fertility trends in the following ways: a) by their frequent preference of less committed forms of partnerships that are not well compatible with childrearing; b) by their higher preference for childlessness and smaller family size; and c) by

their preference for a more pronounced postponement of parenthood. This latter point might be especially important as men could be less concerned about delaying childbearing than women, whose ability to reproduce remains strictly limited by age. A recent study of 13 European countries (Sobotka and Testa 2008) has found some support for hypotheses a) and b). Childless men below age 39 had on average somewhat higher preferences for less traditional and less binding living arrangements (lifelong cohabitation, living-apart-together relationship and single living) than women. More pronounced differences were found in the intentions to remain childless and uncertainty about childbearing intentions. Childless men in all analysed countries except Latvia and Slovenia displayed higher levels of combined intended childlessness and intention uncertainty. When these intentions are related to all men and women below age 40, intended childlessness and uncertainty about childbearing intentions reached 23 per cent among men (average value for 13 countries) and surpassed that of women by a factor of 1.8 on average. These results should be interpreted with some caution. Rindfuss, Morgan and Swicegood (1988: 193-194) indicate that men are more ambivalent about parenthood than women, but their intentions are also less firm, possibly because parenthood usually places less constraints on men's lives. Moreover, men's intentions are frequently related to their current partnership status. Sobotka and Testa (2008) found that living alone and not having a steady partner was the most frequent reason cited by men who stated they intend to remain childless or expressed uncertainty about their intentions. Once having a steady partner, many men may warm up to parenthood: Liefbroer (2005) found that Dutch men perceived greater rewards and smaller disadvantages from having a child than women and they also expected a stronger increase in the quality of their partnership.

4. Second demographic transition and fertility: a positive link?

The concept of the second demographic transition (SDT) as developed by Dirk van de Kaa and Ron Lesthaeghe (e.g., van de Kaa 1987; Lesthaeghe 1995; van de Kaa 2001) is related to fertility levels and trends in three distinct aspects. First, it envisions a massive postponement of parenthood which is facilitated by the widespread use of modern contraception and which enables couples to concentrate on pursuing other goals earlier in life (see also section 2.2 above). Second, as a result of spreading cohabitation and rising union instability, the SDT leads to a marked rise in the proportion of non-marital births, which has been documented in section 3.1 above. Third, it foresees a decline of period and eventually also of cohort fertility below the replacement threshold and a rise in voluntary childlessness. In an 'ideal scheme' of 15 stages of the SDT, van de Kaa (2001: 302) outlines the following development: The fall in period fertility is first fuelled by a reduction in higher-order fertility, and later by the postponement of parenthood. At the end, some recuperation occurs once women who had postponed births have

children at later ages. This recuperation is not sufficient and results in a “structural long-term subreplacement fertility” (Lesthaeghe and Neidert 2006: 669). Although neither Lesthaeghe nor van de Kaa anticipated the massive spread of the ‘lowest-low’ fertility in Europe during the 1990s, the SDT is commonly and at times simplistically associated with very low fertility rates.

The relatively high period total fertility rate (TFR) in the United States, which has been hovering around 2.0 since 1989, represents one out of several important indicators that seem to suggest that the US may constitute an exception among the industrialised countries where the SDT has not taken firm roots. Ron Lesthaeghe and Lisa Neidert’s (2006) study shows that regional-level TFR in the US is negatively correlated with a set of variables representing the SDT on a county level (3141 counties), whereas on a state level (50 states) the TFR shows a small, but positive correlation with the SDT. Data for European countries lead to the suspicion that at present, when the second demographic transition has penetrated all corners of Europe, it may have become positively associated with fertility. Several countries which have been the forerunners in the progression of the SDT retain period and cohort fertility close to the replacement level (section 2). In addition, the recent positive correlation between the TFR and non-marital births, documented by Billari and Kohler (2004) suggests that at least some dimensions of the SDT in Europe have become positively linked to the TFR. Likewise, the lacking evidence for a negative impact of union instability on fertility (section 3.2) and the absence of a negative association between delayed childbearing and first and second birth progression rates in several countries (section 2.4) indicate that some of the main features of the transition are not closely related to fertility change. Finally, Liefbroer and Fokkema (this volume) have found that attitudes towards parenthood are not related to contemporary fertility behaviour in Europe. David Coleman (2004: 18) proposed that the SDT “manifestly has nothing to do with low fertility on a cross-national basis today.” This is surprising, since, as he further argues, the underlying theory should imply for “populations that score highest on post-materialist ideational responses and which manifest strongly the other SDT attributes to have the lowest fertility as well.” Dirk van de Kaa’s (2001) analysis did not reveal any significant correlation of the TFR in European countries in 1992 with post-materialism or subjective well-being. In individual countries young women with post-materialist value orientation had higher family size ideals than materialist women, whereas fertility intentions did not differ between these two groups. However, van de Kaa also found that at a later age (30-34) post-materialists lagged behind materialists in their realised fertility, suggesting that they may overestimate their ability to have children at higher ages.

To investigate the association between second demographic transition and fertility in Europe I develop two indexes of the SDT which represent its two major dimensions—behavioural (demographic) and value orientation. Individual components of these indexes were rescaled to a range of 0 to 10, where the maximum value of 10 corresponds

to a very advanced SDT.⁴ Each of the two SDT indexes is derived as a mean value of its individual components and thus can also range between 0 and 10. The first index, denoted SDT1 and computed for 34 countries, combines six components of family-related behaviour in 2004: mean age at first birth and at first marriage, teenage fertility rate, proportion of non-marital births, total divorce rate and total first marriage rate for women. Ideally, this component would also include data on living arrangements, which are not available for many European countries. To account partly for the spread of cohabitation, the overall index SDT1 was adjusted upward by 0.5 for countries where cohabitating unions account for more than one-tenth of all unions (according to the 2001 census data assembled by Philipov 2005: 31, Table 2 and national data sources). The second index, SDT2, reflects attitudes and value orientation, based on eight selected questions recorded for 29 countries in the European Values Study in 1999-2000 and tabulated in Halman (2001). These items cover a broad range of values and attitudes linked to the SDT, including family attitudes, non-conformism and secularisation (see Appendix). In a crude fashion, they capture a number of items used in a multidimensional analysis of non-conformist values and living arrangements in Europe by Surkyn and Lesthaeghe (2004). The two dimensions reflected by the SDT1 and SDT2 indexes are very closely correlated (correlation coefficient of 0.84). This is an important finding, supporting the notion that values and family behaviour are tightly linked, at least in a cross-country perspective. Both indexes combined, an overall SDT index was derived for 29 countries analysed in the EVS survey. This combined index has a mean value of 5.3 and ranges from 2.5 (SDT score for Romania) to 8.6 (SDT score for Sweden). All four countries that rank above 7—Denmark, Finland, the Netherlands and Sweden belong to the 'usual suspects' of the advanced second demographic transition (in addition, Norway reached 8.0 in the SDT1 index, but no data were available to construct the SDT2 and SDT indexes). A more detailed overview of data and results is provided in Appendix.

Figure 8a plots the combined SDT index against the period TFR in 2004. The correlation is fairly strong ($r=0.71$) and further increases to 0.76 when the most important outlier, Ireland, which has high fertility combined with a low SDT score, is excluded. Surprisingly, out of the two dimensions studied, the values dimension SDT2 is more closely correlated with the TFR ($r=0.71$) than the demographic dimension SDT1 ($r=0.58$). It is possible that the correlation is spurious in that the scatterplot appears to feature two distinct clusters,

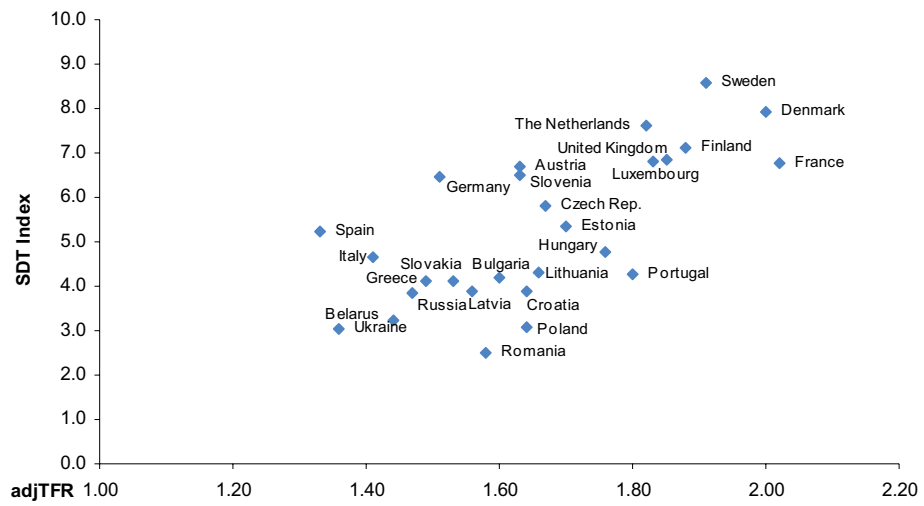
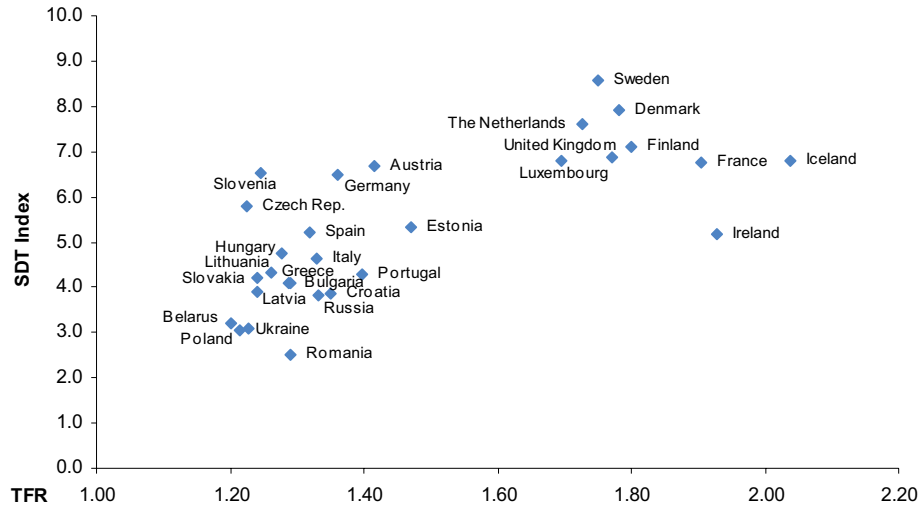
4 For an illustration, consider an example of the proportion of non-marital births, which is one component of the first (demographic) SDT1 index. The lowest value, 0, would be assigned to a country with no non-marital births, 5 to a country with 30 % non-marital births and 10 to a country where the proportion of non-marital births exceeds 60 %. In 2004, Greece reached the score of 0.5 (4.9 % non-marital births) whereas Iceland reached the score of 10 (63.7 % non-marital births) and the mean value for all European countries was 5.3.

one with the TFR below 1.5 and another, with the TFR above 1.6, within each of which the link between the TFR and SDT becomes much weaker. Likewise, one might argue that the association might be influenced by a different pace of fertility postponement which disproportionately affects the period TFR in some countries and thus distorts the association between the TFR and SDT score. This concern might be partly addressed by plotting the SDT index against the tempo-adjusted TFR level estimated for the period of 2001-2003 (VID 2006). As shown in Figure 8b, the correlation weakens somewhat, but remains notable ($r=0.58$). Moreover, the 'low' and 'high' fertility clusters move closer to each other and the gap between them becomes less apparent. The correlation with the values component SDT2 remains very similar ($r=0.56$) and further increases when Ireland is removed from the analysis.

Does a similar positive association hold for intended fertility? Figure 8c, using recent data on the mean intended family size for women aged 25-39 (based on the Eurobarometer 2006 survey tabulated by Testa 2006) indicates that the correlation becomes considerably weaker. In the 25 member states of the EU, family size aspirations are positively, but only loosely, linked to their score in the SDT index ($r=0.30$). Again, this correlation remains almost identical when only the demographic SDT1 index or the values-related SDT2 index is used. Finally, the SDT2 index also shows a close association with mean age at first birth ($r=0.66$), which is the most important indicator of delayed childbearing. This relationship is not surprising, since fertility postponement is one of the major features of the SDT concept.

Naturally, caution is needed in any interpretation of such cross-country correlations. Familiar concerns about ecological fallacy remain valid and it is very likely that there are unobserved underlying factors influencing both the SDT score and fertility levels. Moreover, the observed spatial correlations may be temporary and might disappear if the data were analysed for smaller regions or if they looked at trends over time. At this point, however, we may speculate about the possibility that once the SDT progresses to an advanced stage, it becomes positively linked to fertility levels. Such a possibility invites a number of exciting interpretations and speculations pertaining to the social change and institutional conditions conducive to the second demographic transition. I return to these issues in the concluding section 6.1.

Demographic Challenges for the 21st Century



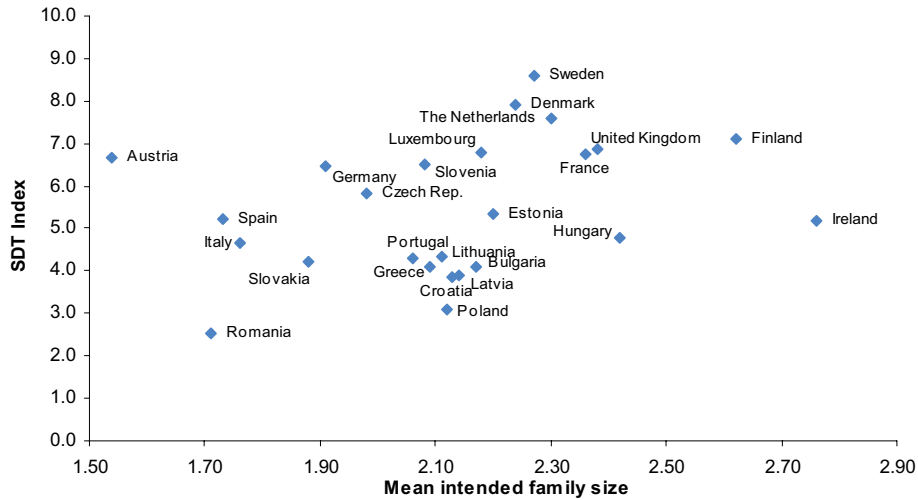


Figure 8a-c: Index of the second demographic transition, total fertility, adjusted total fertility and the mean intended family size in 29 countries of Europe in the early 2000s

5. Migration, childbearing and population change in Europe

During the last four decades, the European Union has become established as a region of immigration, where migration plays an increasingly important role in population trends. In their recent work, Van de Kaa and Lesthaeghe have repeatedly posited that migration and the growing need for ‘replacement migration’ in developed countries have become important components of the second demographic transition (e.g., van de Kaa 2002; Lesthaeghe and Neidert 2006). Here I focus on two aspects of migration: first, on its rising influence on childbearing trends in Europe and, second, on its rising importance for the overall population change and for counterbalancing negative effects of sub-replacement fertility on population and labour force size.

5.1. The rising importance of immigration for childbearing trends

The limited amount of data coupled with different concepts of migrant populations hinders cross-country analysis of the impact of migration on fertility and childbearing trends. To evaluate the contribution of migrants to childbearing and fertility rates I review the statistics on the proportion of births to immigrant and foreign women and the data on fertility differentials between migrant and ‘native’ women in selected European countries. Because only few countries of Europe publish statistics for the first generation of immigrants (i.e., for all residents born outside a given country), I also analyse data for foreign women, who constitute a select group of immigrants (they

exclude 'naturalised' migrants who already obtained the citizenship of their current country of residence) and some of whom might have been born in their country of residence. The data on foreign women provide only a rough picture on migrants' contribution to childbearing and fertility and should be treated with caution. I shall give a more detailed analysis of immigrants' fertility and a discussion on the data and measurement issues in a separate article (Sobotka 2008).

Table 3 summarises main indicators of the contribution of immigrant women to childbearing in nine countries of western, northern and southern Europe. The overall proportion of births to immigrant women is substantial in all the analysed countries (irrespective of whether data pertain to all immigrants or to foreign women only) and frequently reaches one-fifth of all births (e.g., in England and Wales and Sweden). In Switzerland, births to mothers with foreign nationality make up more than a quarter of all births. Even in southern European countries, where births to foreign women were less common until recently, immigrants make a steadily rising contribution to the total births. This trend is most pronounced in Spain, where births to foreign women accounted for 15 per cent of all births in 2005, up from 3 per cent in 1996. However, data for foreign women seriously underestimate the share of immigrants in total number of births, as many migrant women are naturalised relatively soon after their arrival.

Immigrant and foreign women also usually display considerably higher period fertility rates than the 'native' women. The TFR of immigrants typically reaches close or somewhat above the replacement level (e.g., England and Wales and Sweden), even in the countries with lowest-low period fertility rates, such as Spain. This overall indicator of migrants' fertility hides a huge heterogeneity in childbearing patterns of different groups of migrant women. Data for foreign-born women tend to exaggerate migrants' TFR as foreign, non-naturalised women form a select group with higher fertility: many of them have arrived for the purpose of marriage or family formation, they typically have a relatively short duration of stay and display a lower degree of assimilation than those that have been 'naturalised'. Trends over time differ between countries, but typically indicate a gradual diminishing of differences between fertility levels of immigrants and foreigners on one side and natives on the other side.

Table 4: Proportion of children born to immigrant or foreign women, TFR of immigrant (foreign) and 'native' women and the net impact of immigrants' fertility on the TFR.

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Country	Period	Type of data	Births to immigrant women (%)	TFR 'native' women	TFR immigrant women	Net impact of migrants on the TFR	Source
Austria	2005	F	11.7	1.31	2.00	0.10	Kytir 2006
Belgium (Flanders)	2003-4	F	12.4 (F), 16.8 ¹⁾	1.51	3.07	0.10	Van Bavel and Bastiaenssen 2006, VAZG 2007
Denmark	1999-2003	I	13.5	1.69	2.43 ²⁾	0.075	Statistics Denmark 2004
England and Wales	2005	I	20.8	1.6 (2001)	2.2 (2001)	0.07 (1996)	ONS 2006; Coleman et al. 2002
France	1991-98	I	12.4	1.65	2.5	0.07	Toulemon 2004b
The Netherlands	2005	I	17.8	1.65	1.97	0.078	CBS Statline 2006
Spain	2002	F	15.0 (2005)	1.19	2.12	0.08	INE 2006; Roig Vila and Castro Martin 2005
Sweden	2005	I	19.5	1.75	2.01	0.053	Statistics Sweden 2006
Switzerland	1997	F	26.3 (2005)	1.34	1.86	0.14	SFSO, Wanner 2002

Type of data: I – data pertain to all immigrant women (first generation); F – data pertain to women with foreign nationality only (excluding 'naturalised' immigrants and including foreign-nationality women born in the country)

Notes: 1) Births to women with other than Belgian nationality at the time of their birth. This share excludes immigrants born with Belgian nationality and births to women with unknown nationality at their birth (6.2 per cent). 2) Excluding immigrant women born with Danish nationality.

Immigrants often differ from the native population in many other fertility characteristics. Migrants from more conservative non-European settings frequently display an early start of childbearing, markedly lower levels of childlessness and higher progression

rates to third and later births, higher ideal family size and very low non-marital fertility (Compton and Courbage 2002). Because of the progressive assimilation among subsequent generations of immigrants in their union formation and childbearing and, in a broader sense, their language and ethnic identity, the analysis of long-term effects of migration is very sensitive to the assumptions on migrants' assimilation and mixed-origin populations (Coleman 2006b).

The aggregate net impact of migrants on the observed trends and levels in period fertility appears to be relatively small despite their fertility rates well exceeding those of the native populations. In all countries analysed in Table 4, fertility of immigrant or foreign women had a slight upward effect on the period TFR. Except for Switzerland, this effect was comparable across countries: it shifted the period TFR upwards by 0.05-0.10 (i.e., by 3-7 per cent). This analysis indicates that immigration has played a relatively minor role in the recent upswing in the period TFR in some countries of Europe and that this upswing was mainly due to the rise in the TFR of native women, partly associated with a slowing-down of fertility postponement. The data for the Netherlands support this point: between 1996 and 2002, when the period TFR for all women increased from 1.53 to 1.73, the TFR among women born in the Netherlands rose even faster (from 1.47 to 1.69, data from CBS Statline 2006). Similarly, in Flanders the period TFR of women with Belgian nationality has been rising more rapidly than the TFR of women with foreign nationality. Only a part of this trend could be attributed to the naturalisation of foreigners (Van Bavel and Bastiaenssen 2007).

5.2. Replacement migration: can migration substitute 'missing' births?

The previous section has shown that immigrants have a small, but non-negligible positive influence on fertility rates in many parts of Europe. Can immigration also serve as a substitution of births 'missing' due to low fertility? This question lies at the heart of many debates concerning future trends in population size, labour force and population ageing. In 2000, a UN report titled *Replacement migration: Is it a solution to declining and ageing population?* sparked media frenzy about the future of European populations. The remarkably diverse interpretations of its major findings in the media reflect considerable confusion about the role of migration for population change in Europe⁵. Practically all the studies show that any realistic level of migration cannot stop population ageing and can only have a relatively modest impact on slowing down this process. However, migration is likely to have considerable (positive) effect on the size of the labour force (Feld 2000; Bijak et al. 2007) as well as on the total population size (UN 2000; Lutz and Scherbov 2003a). Higher immigration combined with higher

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5 Teitelbaum (2004: 32) reviews the unexpected media attention to the UN report that had started already before its publication date.

economic activity can partly offset negative economic consequences of population ageing (Bijak et al. 2007).

Do many European countries experience migration levels that can be seen as constituting 'replacement migration'? Although some evidence suggests this may be the case⁶, no clear definition of replacement migration exists (see Saczuk 2003 for a critical assessment). One possible conceptualisation of replacement migration assesses whether immigration makes up for the difference between the observed number of births and the hypothetical number of births that would have been achieved if fertility reached replacement level. A long-term combination of sub-replacement fertility and replacement migration should eventually lead to a stationary population, i.e., a population with constant size and fixed age structure (under the assumption that mortality remains constant as well). Such a concept of replacement migration is not easily analysed because migration widely fluctuates over time: hence it is problematic to use migration rates for any particular year to estimate long-term population replacement.

The importance of immigration for childbearing trends and population change in many European countries implies the need to rethink the traditional concepts of replacement-level fertility (Smallwood and Chamberlain 2005). Calot and Sardon (2001) suggest that the 'net replacement rates' which reflect both mortality and migration are preferable to the widely used 'net reproduction rates' and their inclusion may change the evaluation of future population prospects. This is well illustrated by Daguet (2002) who computed different measures of generation replacement for France. A different approach has been proposed by Ortega and del Rey (2007) who compute 'Birth Replacement Ratios' (BRE) relating period numbers of births to the mean size of the mothers' generation at birth.

In order to analyse to what extent migration acts as a substitution for births I propose a simple and intuitively understandable indicator, labelled Gross Replacement Rate (GRE) which combines the readily available period indicator of the Gross Reproduction Rate (GRR)⁷ with the subsequent (cohort) changes in the total population of women

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6 Projection scenarios by Lutz and Scherbov (2003a) for the EU-15 assuming various combinations of fertility and migration provide a strong evidence for the importance of migration for 'substituting' births in the European Union. Their original report published by the IIASA (Lutz and Scherbov 2003b: 11-12) suggests that in the EU-15 "the effect of 100,000 additional immigrants per year corresponds to that of an increase in the TFR of 0.1."

7 Gross Reproduction Rate shows the average number of daughters that would be born to a woman experiencing over her reproductive life the fertility rates observed in a given year, assuming zero mortality until the end of her reproductive period. It is computed by multiplying the period total fertility rate with the proportion of female live-born children.

born in a year for which both GRR and GRE are measured. Unlike in Ortega and del Rey's BRE approach, the GRE does not estimate the impact of migration on birth rates: it shows to what extent immigration itself acts as a substitution for births. Different age categories for computing the GRE may be used; they are defined by the duration since the year for which the GRE is computed. For instance, the GRE for the year 1975 and duration (age) 20 is computed as a ratio of the total number of resident women aged 20 in the year 1995 (1975 + 20) to the original number of live born female children in the year 1975 multiplied by the Gross Reproduction Rate for 1975:

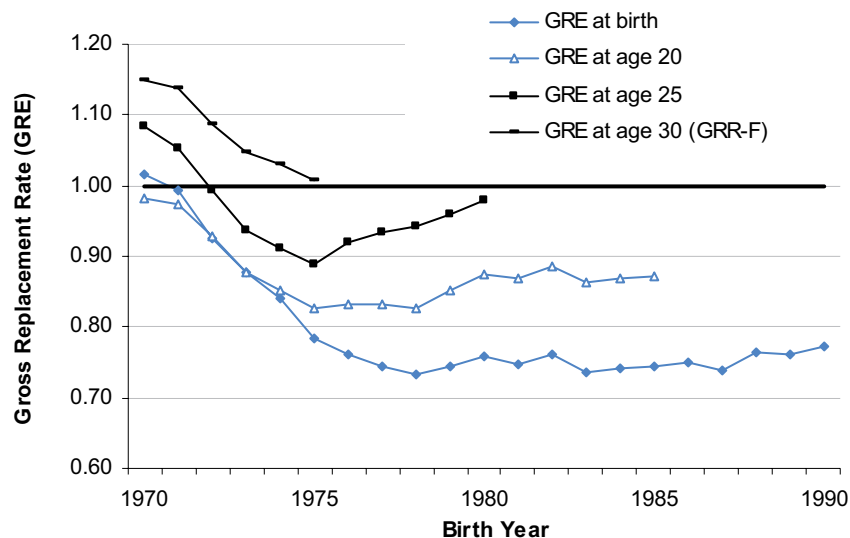
$$GRE(t=1975, a=20) = GRR(t=1975) \cdot PF(t=1995) / BF(t=1975) = TFR(t) \cdot BF(t) / B(t) \cdot PF(t+a) / BF(t),$$

where t is the year for which the GRE is computed, a represents selected duration (age) since the year t , P stands for population, B denotes live births, and the index F stands for females. For age 0, i.e., for the time of birth, the GRE equals the GRR. Subsequently, the total size of any female cohort changes not only through immigration and emigration but also due to mortality. In parallel with the commonly used net and gross reproduction rates, which estimate the number of female children surviving until the usual age at reproduction, the GRE computations may be limited to capturing population change occurring until the typical age at childbearing. For convenience, age 30 may be used as a 'terminal age' for computing the 'final' GRE, labelled GRE-F⁸. The indicator proposed here suffers one obvious disadvantage typical of the cohort data: For any year of interest it reveals the importance of migration only after a sufficient number of years passes during which migration transforms the size of the original birth cohort. GRE-F can be computed only 30 years after the year for which the gross replacement rates are analysed. But this index has also a number of advantages. First of all, by summarising the impact of migration on the original population of each birth cohort over longer periods of time it eliminates the effects of short-term swings in migration streams that would strongly influence the indicators based solely on the period data. The GRE can also be used to trace the impact of migration on each birth-year cohort over time.

I illustrate the use of the GRE using an example of Switzerland, which constitutes an ideal setting for analysing 'replacement migration' as it records long-term low fertility combined with sizeable immigration. The period TFR dropped below 1.6 since 1976

8 For an illustration, consider a computation of the GRE-F for Switzerland for 1975. The Gross reproduction rate (GRR) for that year reached 0.783. By age 30, the total number of resident women born in 1975 reached 48,974 (on 1 January 2006) and increased by a factor of 1.287 when compared with the number of live-born women in 1975 (38,055). A multiplication of this index with the GRR for 1975 yields 1.007, which is the GRE-F for 1975 (i.e., the GRE for 1975 computed for the duration of 30 years). In this particular case, the GRE-F suggests that the potentially negative effect of sub-replacement fertility in 1975 on long-term size of population at prime childbearing ages was fully offset by immigration during the subsequent 30 years.

and remained below this level ever since. Figure 9 shows how the GRE for various years (1970-1994) changes over time as the cohorts of women born in those years are modified through migration. Although the Gross Reproduction Rate reached only 0.72-0.77 in 1975-2000, the Gross Replacement Rate rises strongly due to immigration, especially at ages 18 through 30. For instance the GRR in 1978 reached only 0.73, but subsequently the GRE has risen substantially, reaching 0.98 when the 1978 cohort reached age 27. Whereas the GRR signals that the period fertility rates were 27 per cent below replacement level (ignoring mortality), accounting for migration below age 28 changes the sub-replacement 'deficit' to 2 per cent only and it is very likely that by age 30 the GRE for 1978 will surpass 1, as it did for the years (cohorts) of 1970 to 1975. In sum, Switzerland can be considered a textbook example of a replacement migration country: low fertility rates combined with substantial immigration imply that the final Gross Replacement Rate, measured at age 30, reaches values close to 1 or even higher.

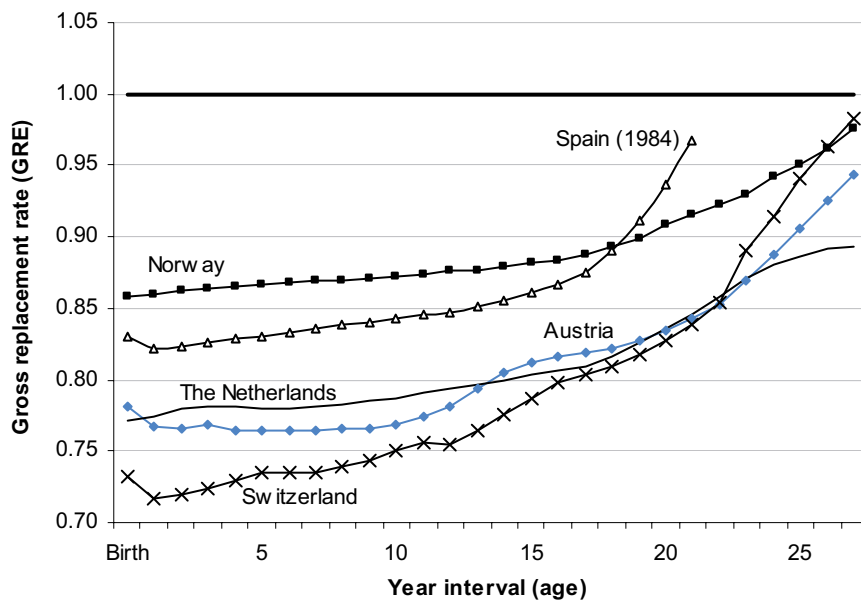


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Figure 9: Gross Replacement Rate (GRE) in Switzerland in 1970-1990 in selected age (year) intervals

To see whether Switzerland constitutes an exception or a relatively common pattern Figure 10 looks at the GRE by duration (age) for 1978 in 5 countries with different migration patterns: Austria, the Netherlands, Norway, Spain and Switzerland (for Spain, the GRE for 1984 is analysed). The impact of migration on the GRE is widely different between countries and over time. Overall, the graph shows rather convincingly that when the migration balance is included in the replacement rates computations, the

huge deficit depicted by the gross and net reproduction rates may markedly decline or disappear altogether, even in some countries with very low fertility levels. The GRE ratios above 0.9, recorded in most western, northern and southern European countries, convey a less dramatic impression of long-term population trends in Europe than the conventional fertility and replacement indicators.



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 Figure 10: Gross Replacement Rate (GRE) in Austria, the Netherlands, Norway and Switzerland in 1978 and in Spain in 1984 by the number of years elapsed from the year for which the GRE is measured

6. Past and future fertility and migration trends in Europe and their broader implications

Much of the presented evidence lends support to the introductory hypotheses. Lowest-low fertility rates are tightly linked to fertility postponement and so far there is no larger country in Europe that appears likely to experience lowest-low cohort fertility rates as well. Some of the most important features of the second demographic transition such as the intensive fertility postponement, the rising instability of partnerships and unions, and the eroding importance of marriage for childbearing, do not appear to have

the expected strong negative impact on fertility, at least when analysed in a cross-country perspective. The aggregate index measuring the demographic and the values components of the SDT shows a positive association with the period TFR, even when the tempo effect is controlled for. Men seem to be less enthusiastic about parenthood than women and their lower fertility desires may exert a slightly negative effect on fertility. Migration has a slightly positive impact on the period fertility rates and a strong and rising influence on the overall number of births. Yet its most important role is in 'substituting' some of the births 'missing' due to low fertility. Immigrants typically come at younger ages and if their numerical impact on the total number of women below the typical age at reproduction is taken into account, population replacement rates in northern, southern and western Europe are close to or even above the threshold necessary to maintain a stable population size.

Although almost all European countries record low period fertility and declining cohort fertility, there are consistent regional differences in low fertility which have crystallised since the 1980s. Anton Kuijsten (1996: 141) argued persuasively that in the course of the second demographic transition "the European family map has grown more diversified rather than more uniform." In analogy, there are signs that fertility trends may become more diverse both between and within countries, with a rising heterogeneity in childbearing behaviour closely linked to social status. Together with unfolding migration trends, contemporary fertility has widely different consequences for long-term population prospects in Europe (see also section 6.3 below). While the European Union may have a relatively stable or slightly rising population and stagnating labour force size, different European regions may be set on widely diverging pathways. If contemporary fertility and migration differences in Europe prevail into the future, the outlook for population trends in different regions could be summarised in a stylised fashion as follows:

- the relatively high fertility and moderate to high migration in most countries of western and northern Europe imply long-term population increase and slower population ageing;
- the rather low fertility of German-speaking countries combined with moderate (Germany) or high (Austria and Switzerland) migration rates implies slow or stagnating population growth;
- the low fertility in southern Europe combined with high immigration (except in Portugal) implies further population growth and less severe population ageing than would be recorded in the absence of migration
- low fertility, spread of one-child families and negative migration balance in the European countries of the former Soviet Union and in some of the Balkan countries (Bulgaria, Romania, Serbia) will lead to a long-lasting depopulation
- in central European post-communist countries, this negative trend is being moderated by a gradual shift in migration trends, turning most of these countries into 'receiving' countries. In contrast with eastern Europe, the rising immigration is likely to prevent a rapid population decline

This simplified summary ignores some specifics of individual countries and regions. Nevertheless it reiterates the message voiced in the introductory part: low fertility, when seen in conjunction with immigration, is not an important threat for Europe as such and especially not for the richer parts of the continent, including most of the EU countries. Rather, it is a regional problem that has most serious consequences in parts of Europe recording a troubling mix of low fertility, emigration and, in some countries, also a relatively high mortality.⁹ For these regions, particularly in eastern and south-eastern Europe, but also in eastern Germany, an extended period of low fertility and high emigration will have a long-lasting impact that will probably imply a marked population decline in the decades to come.

A final discussion on fertility, migration and long-term population prospects of Europe focuses on three interrelated issues. First, I speculate why the second demographic transition is positively linked to fertility on a cross-sectional basis. Second, I outline broader social, institutional and economic changes that may positively affect fertility developments in the near future. Third, I emphasise the importance of migration and argue that given contemporary fertility and migration trends, the envisioned population decline in Europe may be avoided or postponed for many decades. In conclusion, I suggest that the fears of European demographic marginalisation are ill-formulated and exaggerated.

6.1. Second demographic transition and very low fertility rates

The positive association between the second demographic transition and fertility as well as the findings on stable fertility in western and northern Europe merit further discussion. Two different, although not mutually exclusive, interpretations may be pursued. First, it is possible that a number of interrelated factors transform societies in a way that is potentially conducive to somewhat higher fertility. This could happen despite the broadening number of competing choices to parenthood. If supported, this possibility might change our perspective about the future of European fertility. Second, a more humble interpretation of the presented results implies that the second demographic transition does not necessarily lead to a permanent decline in period and cohort fertility and fertility intentions below the replacement level. In this respect, the US may not be an exceptional case among industrialised countries after all. France,

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⁹ Emigration has another potentially harmful and rather neglected effect on fertility. In addition to affecting younger people most strongly, it is often sex-selective. Societies with an asymmetric sex distribution of emigrants may see a shift in the sex ratio of their resident population that will strain the 'partnership market' and eventually contribute to a lower number of births in the 'residual population'. Such shifts in the sex ratios among younger cohorts (1974-1984) have been documented by Weiss (2006) in the case of the Mecklenburg-Vorpommern region in Eastern Germany, where an intensive emigration of women after 1990 has led to the 'deficit' of about 15% of women in 2003.

with the period TFR reaching 2.0 in 2006 and the completed TFR of women born in 1973 projected at the same level (trend projection in Prioux 2006: 351, T. 5) is the most obvious European example of such a pattern. Under this interpretation, the SDT is not closely connected to fertility level and the 'advanced SDT' countries would continue having different levels of low fertility, with some of them possibly retaining stable fertility close to the replacement level.

The first possibility, on the other hand, suggests that very low fertility may be a temporary result of a combination of fertility postponement (causing a negative tempo effect) and institutional framework (societal norms, gender relations, family policies, welfare system) that has not yet adjusted to the SDT behaviour. Thus the stage of very low fertility would be a temporary by-product of the second demographic transition. Eventually, fertility would rise when societal norms and institutions become more compatible with the new diversity of family forms and living arrangements. On the surface, this argument is problematic. It might be more reasonable to expect a shift towards a one-child family norm in the course of the SDT. As Jan van Bavel pointed out¹⁰, a one-child family could be considered as an ideal solution compatible with individualistic ideology of self-fulfilment, typical of the second demographic transition. One child enables men and women to achieve parenthood status, give meaning to their lives and, in a broader sense, achieve a "kind of immortality and establish a link to both past and future" (Hagewen and Morgan 2005: 514) without losing too much on other enjoyments life has to offer. However, surveys on fertility intentions lend support to the 'higher fertility' reasoning: even in those countries that score highest in the SDT dimension, such as France, the Netherlands and Sweden, fertility desires remain relatively high and above or around the replacement-level threshold (Testa 2006, see also Figure 9c above). Similarly to the US, a two-child family norm prevails in most of Europe. As Morgan and Hagewen (2005: 12) pointed out, "there is a remarkably pervasive desire (and supporting norms, structure and biological predispositions) for *two children when and if one can afford them and care for them*" (italics by the authors). This conditional wording is important. In advanced societies people highly value many alternatives to parenthood, they postpone binding decisions, pursue high education and job careers, enter intimate partnerships for their own sake and consider leisure and consumption as important factors potentially conflicting with their childbearing decisions. It is possible that the countries scoring high on the SDT dimension have certain features that reduce some obstacles to childbearing and make it easier for individuals to realise their childbearing desires. Consequently, the 'advanced' SDT societies would be characterised not by an overall higher level of desired fertility, but by a smaller gap between desired and eventually realised fertility.

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10 Comment at the colloquium on "Demographic challenges for the 21st century," Brussels, February 15-16, 2007.

If this reasoning is correct, it is important to ask which conditions are conducive to higher levels of realised fertility and at the same time typical of advanced SDT societies. A search for these factors should encompass cultural and political as well as economic characteristics of these societies, since economic prosperity, affluence and modern welfare state are important preconditions of the SDT. Economic prosperity fuels rising aspirations and formulation of new needs (Lesthaeghe and Surkyn 1998). Particular welfare and family policies may support or hinder the realisation of childbearing desires (Esping-Andersen 1999; McDonald 2002). This is not a unidirectional pattern: change in values and behaviour may also lead to a change in broader institutional conditions, making laws and policies more compatible with the new behaviour. Furthermore, although most behavioural and value shifts are shared across countries, considerable differences are likely to prevail.

6.2. Social, institutional and economic factors that may lead to higher fertility: towards more time and lifestyle flexibility

This section outlines social, political, and economic changes that may be conducive to higher fertility in the countries that have reached very low fertility levels. Many of these characteristics are typical of societies that progressed furthest on the SDT dimension. This selection is rather subjective; a number of other factors that may lead to higher or lower fertility in the future can be outlined (e.g., Lutz 2006).

- Individualised and comprehensive welfare system

Many higher-fertility countries have a comprehensive benefit system based on individualised entitlements. Rather broad welfare coverage reduces the risk of falling into poverty, especially for women and young adults, and gives them more flexibility in making important life decisions. The principle of individualised benefits, which Esping-Andersen (1999) refers to as 'defamilization,' relaxes households' welfare and caring responsibilities and diminishes thus the dependence on kinship. This is in contrast with welfare arrangements centred on 'traditional' family model, especially the 'male breadwinner' family. Esping-Andersen (1999: 49) notes that such model creates a welfare deficit as it is based on a post-war family model that is becoming extinct.¹¹ Such welfare systems may penalise individuals that do not behave in conformity with the traditional norms and thus have a negative effect on fertility (Rindfuss, Guzzo and Morgan 2003).

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11 Baizán, Michielin, and Billari (2002) have shown that younger cohorts in Spain provide strong support to gender equality and display tolerance towards individualistic forms of households. However, the less traditional living arrangements are penalised by the 'powerful internationalization of welfare within the family' (Baizán, Michielin, and Billari 2002: 199). This leads to a slower spread of cohabitation, divorce and non-marital childbearing, but also to later home leaving, delayed union formation, delayed childbearing and, consequently, lower fertility.

- **Strong support for work-family combination**

Support of women's employment and policies that facilitate easy re-entry of mothers into the labour market, typical of northern Europe, appear to be conducive to higher fertility. Such policies, including various child care arrangements and support for part-time and flexible jobs, are responsive to a profound change in women's roles and identity that shifted from a family-centred world to a wider world, whose main components are career and economic independence (Goldin 2006)¹². For well-educated women who perceive their labour participation as a self-understandable and important part of their lives, the limited possibilities to combine childrearing and employment impinge heavily on their childbearing decisions. A number of countries that provide rather generous family benefits score poorly on this dimension. Austria and Germany are prime examples of such pattern: rather generous parental leave benefits supporting full-time home care of one parent seem to have little impact on fertility as the existing family policies are ineffective in supporting child care and employment for women with small children (for Austria, see OECD 2003). As a result, for a majority of women parenthood implies a prolonged interruption of their work career with potentially damaging effects on their income and career progression—a situation many of them avoid by 'abstaining' from parenthood altogether. High childlessness in the German-speaking countries of Europe, concentrated among highly educated women (Duschek and Wirth 2005, Spielauer 2005), seems to be a consequence of this situation.¹³

- **High levels of gender equality in the public and in the private sphere**

In almost all countries of Europe, women and men have equal opportunities in education and labour participation. Statistics on the average years of schooling show that younger women (aged 25-34) in most OECD countries have received longer years of schooling than men (OECD 2006). In the public sphere, women's inequality has taken more subtle forms than in the past, in the form of gender pay gaps or low levels of employment security for women who temporarily withdraw from work during their parental leave period. Nordic countries, which are most 'advanced' in the SDT, are also known for their strong support of gender equality in the society at large (e.g., Oláh and Bernhardt 2008). More important gender differences prevail in the private sphere. McDonald (2000) has argued that the lack of gender equity in the family, with

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12 Goldin (2006: 9) documents a massive shift in the expectations of young women about their future employment that occurred in the United States between the late 1960s and the late 1970s. Whereas only one third of young women interviewed in 1968 expected to be in paid labour force by age 35, this figure increased to about 75% by the late 1970s. In agreement with the SDT concept, Goldin links this massive change in women's identity to the spread of the contraceptive pill, extended education, and the postponement of marriage.

13 Note, however, that the analysis of time trends in selected variables of work-childbearing compatibility has not revealed any association with the time trends in the TFR (Engelhardt and Prskawetz 2004).

traditional norms and expectations about gender roles and almost all the burden of child care, cooking and cleaning falling upon women, may be responsible for low fertility once gender equality in the public sphere reaches high levels. This argument suggests that a combination of state support for work-family combination and greater involvement of men in child care and household tasks, reduce the price of having children for women. Dalla Zuanna's (2001: 150) study on how Italian 'familistic' culture contributes to low fertility gives a similar reasoning: the society is organised according to the 'male breadwinner model', with limited child care facilities, low government support for families, little men's help in the household and high expectations placed on women with respect to the amount of time they should spend with their children (see also Esping-Andersen 1999). Norms prescribing that mothers should stay at home when their children are young increase the (cultural) role incompatibility between motherhood and fertility (Brewster and Rindfuss 2000).¹⁴ Also many post-communist societies experience a persistence of traditional gender norms on employment and the division of household tasks, which preserve asymmetries between partners and which contribute to lower fertility (see Stankuniene and Jasilioniene 2008 for Lithuania). On a micro level, there is some evidence that greater involvement of fathers in the child care is positively linked to subsequent fertility (for second births see Cook 2004; Mencarini and Tanturri 2004).

- Low 'familism' and high levels of 'secular individualism'

Secularisation and individualisation are perceived as important factors fostering low fertility during and after the first demographic transition (Lesthaeghe 1983). Paradoxically, the rise of 'secular individualism' may eventually pave the way to higher fertility in countries with very low fertility levels, where prevailing social norms and institutional arrangements discourage behaviour that may have a positive impact on fertility, such as early leaving of parental home, cohabiting or having a non-marital child (e.g., Dalla Zuanna 2001). Secularisation is weakening traditional cultural norms, making people more tolerant of divorce, cohabitation, abortion, homosexuality and cultural change in general (Lesthaeghe 1983; Norris and Inglehart 2004). In countries where 'secular individualism' is strongly established, and where non-marital fertility is widely accepted, women "can more fully realize their fertility desires without being constrained by men's preferences" (Presser 2005).

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¹⁴ A more extreme version of such gender-stratified norms, including strict expectations about women's domestic role after marriage, is frequently used to explain the low marriage rate and very low fertility in Japan (e.g., Retherford, Ogawa, and Matsukura 2001).

- [Fostering low unemployment, high female employment and flexible work arrangements](#)

Many studies, especially those focusing on southern and central-eastern Europe, link very low fertility to high unemployment and employment insecurity among young adults. The rapid rise in unemployment in these regions—during the 1980s in southern Europe and the 1990s in central-eastern Europe—coincided with the fall in the period TFR and an intensive fertility postponement. Young people in Spain have a particularly precarious position in the labour market due to legislation providing a strong protection to the long-term employees and creating barriers for new entrants to the labour market (e.g., Baizán, Michielin and Billari 2002). This regulation has the perverse effect of fostering an expansion of temporary employment. Adsera (2005) gives evidence that both high unemployment rates and a high gender gap in unemployment have a strong negative effect on fertility rates across Europe. On the other hand, high proportions of government jobs, a flexible labour legislation and high proportions of part-time employment all have a positive effect on fertility, which under these conditions may approach the replacement level (Adsera 2004). As unemployment has been falling in most parts of Europe since the early 2000s and labour market reforms will stimulate labour flexibility, more part-time work and a higher participation of women, the negative effects of employment insecurity on fertility are likely to diminish in the countries that have been most affected.

- [The brave new world of assisted reproduction](#)

The use and the possibilities of assisted reproduction technology (ART) have expanded massively since 1978, when the first baby resulting from in-vitro fertilisation was born in the United Kingdom. At present, new modes of assisted reproduction are rapidly developed and tested, with methods like freezing ovaries or gathering and using donor eggs moving from the realm of science fiction to common use (e.g., special issue of *New Scientist* on 'Reproductive revolution', 21 October 2006). In most countries of Europe, 1 to 4 per cent of children born in 2002 were conceived through ART methods (Nyboe Andersen et al. 2006). ART use has greatly contributed to some peculiar trends in fertility, especially to a rapid increase in the number and proportion of multiple births (Stephen 2000), occurring due to a common practice of transferring two or more embryos into a woman's uterus. The spread of ART has also resulted in a rising number of women having children at extreme late childbearing ages, including women past menopause, and has repeatedly led to reaching new record-high childbearing ages (Sobotka, Kohler and Billari 2007). There are many reasons to expect that the importance of ART will further increase in the future: improvements in the technology, the continuing postponement of childbearing to ages when more women will face infertility and, possibly, also a general increase in male-factor infertility. However, at present, most common ART methods suffer very low success rates at later childbearing

ages, especially at age 40 and above.¹⁵ Any future rise in the importance of ART for fertility will in part depend on the improvements of its success rates among late mothers-to-be.

In sum, besides the ending of tempo distortions, there are numerous reasons why fertility may increase somewhat in the lowest-fertility countries of Europe. Very low fertility is not inevitable in Europe. The arguments summarised above suggest that the institutional framework most conducive to reaching relatively high level of realised fertility is that of the Nordic welfare state (see also Esping-Andersen 1999; Liefbroer and Fokkema, this volume). It does not mean that different parts of Europe are likely to adopt the full package of the Nordic welfare regime. But it is likely that the existing social policies in different parts of Europe will adopt some features of this regime, such as increased provision of child care, more emphasis on work-family combination, support for gender equality and fathers' involvement in child care. This may happen gradually as a lagged adaptation to the vastly changed norms and behaviours related to family and gender roles, but in part also due to specific EU policies promoting gender equality and family-friendly policies. In parallel, secularisation and individualisation are likely to continue in the more 'familistic' and 'traditional' regions, decreasing the social pressure to follow traditional pathways and increasing the likelihood that more people will enter non-traditional families and living arrangements (Thornton 1989). Recent evidence for southern Europe shows that this change is already well under way there.

An alternative scenario involves a shift towards liberal welfare regimes, typical of Anglo-Saxon nations, which provide less generous protection against various risks individuals may face. Especially some countries of central-eastern Europe, with lower economic affluence and tight budget constraints, seem to be moving in this direction. This may lead towards a more polarised version of the SDT and, generally, to more socially stratified societies with higher poverty rates, large social status disparities in living arrangements, family size and in the timing of union formation and childbearing. However, similarly to the Nordic countries of Europe, this shift may also be compatible with an overall higher fertility. The United States and the United Kingdom achieve fertility rates similar to those in northern European countries or France due to their social status heterogeneity in parity distribution and the existence of sizeable minorities having relatively large families.

Various factors that may potentially reduce the observed gap between intended and realised fertility have one thing in common: by reducing the objective as well as

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15 In the US only 11% of ART cycles using non-donor eggs or embryos resulted in a live birth when performed at age 41-42 in 2004; the success rate was much higher (37%,) among women using ART below age 35 (CDC 2006).

perceived obstacles to childbearing they broaden the life-course flexibility with respect to decisions on the timing of childbearing, the number of children, and also the choice of living arrangement preferred for childbearing. Note that none of these factors are explicitly pronatalist: they constitute a mix of changes that are likely to progress spontaneously and policies designed to improve the economic performance or the well-being of individuals and families. More such factors may be listed. For instance, Hakim's (2003) argument that a significant fraction of women remains home-centered and displays strong family and child-orientation implies that specific family policies may be designed to support these women and, as a by-product, also to encourage fertility. In a broader perspective, the argument on the potentially positive effects of rising life-course flexibility on fertility also relates to the argument pursued by Avramov and Cliquet (2003) who posited that policies should aim to spread "more innovatively paid and unpaid duty-free time over the entire life course."

6.3. Migration and fertility combined: can the European population implosion be avoided?

At present the European Union attracts more migrants than the United States, a classical country of immigration and a symbol of endless opportunities for the new 'settlers'. Immigration has become the main engine of the EU population growth already since the early 1990s and many countries record population growth only due to substantial migration streams. An interaction between the rising number of immigrants, their relatively young age structure and their higher fertility implies that migration has a strong and long-lasting impact on population growth and structure. Sizeable migration streams are radically and permanently transforming European populations in ways unforeseen until recently by demographers and social scientists. Coleman (2006b: 402) proposes that low fertility combined with high immigration is "changing the composition of national populations and thereby the culture, physical appearance, social experiences, and self-perceived identity of the inhabitants of European nations".

Migration is also the most unstable and the least predictable component of population change. Spain provides a telling example of the unexpected effects of migration on population trends: between 1999 and 2006 the total population of Spain has risen by 4.0 million persons, i.e., by one tenth, of which 3.7 million constituted a net increase due to migration (Eurostat 2006b; Council of Europe 2006). This trend has rendered even the relatively recent population projections obsolete.¹⁶ Yet until 1990 Spain was a country of

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 16 For instance, the Eurostat projection published in 1996 envisioned in its baseline scenario that the Spanish population, which reached 43.8 million in 2006, would peak soon after 2010, when it would reach 40.4 million. Even the high variant, which expected considerably higher fertility than is actually being recorded, projected that the population size recorded in 2006 would not be reached until after 2020 (Eurostat 1996 and Shaw et al. 1997).

emigration, recording a negative migration balance each year. Surprisingly, only limited attention has been paid to the evaluation of migration assumptions in national and regional population projections for Europe. Moreover, there is a growing gap between the booming field of migration theories and the projection practice, which remains disconnected from these theories and usually continue to “rely on ad-hoc assumptions based on little theory and virtually no definable methodology” (Howe and Jackson 2005: 1).

Typically, as in the case of Spain, past projections in many European countries tended to underestimate future immigration. This has occasionally led to projecting an early onset of population decline which eventually has not materialised in the expected time frame. However, the opposite trend may occur as well. David Coleman (2006b) points out the examples of Denmark and the Netherlands, where the tightening of the migration legislation after 2002 has markedly reduced immigration and led to net migration decline below the projected levels. The substantial uncertainty related even to migration trends in the near future should be taken into account in the evaluation of the link between migration, fertility and population trends.

Having this limitation in mind, it seems safe to conclude that in many parts of Europe immigration taking place at lower ages (childhood and young adulthood) serves as a substitution for most of the births ‘missing’ due to sub-replacement fertility, even when very low fertility persists for long periods of time. Switzerland constitutes a model example of such development.¹⁷ Section 5 suggests that more European countries follow a similar pattern. Dalla Zuanna (2006), focusing on the industrial triangle of north-west Italy and including both the effects of international and internal (south to north) migration, shows that significant and continuous waves of immigration may slow population ageing and prevent population decline even in a region experiencing half a century of very low fertility. The study hypothesises that there is a cyclical generational process, where high aspirations for the social mobility of their children lead couples to limit their fertility. Their children subsequently achieve high levels of education and cannot fill the demand for low-paid and low-skilled jobs. This demand is met by immigrants who, upon their arrival, soon reduce their fertility in order to achieve a better socio-economic position for their children. Dalla Zuanna (2006: 201) asserts that during the last two decades of the 20th century “the most developed and economically dynamic regions [in the EU] were those with the strongest positive migratory balances”.

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17 Wanner (2002) projected a hypothetical population change in Switzerland that would have occurred in the absence of international migration after 1945. By the year 2000, Swiss population would be declining and would reach only 5.2 million persons as compared with the currently registered value of 7.2 million, almost 40 percent above the zero migration scenario.

If this reasoning holds¹⁸ the new members of the EU, especially the former state-socialist societies of central Europe whose economy has been rapidly expanding, will soon experience increasing immigration streams, comparable to trends recorded two or three decades ago in southern Europe¹⁹. More generally, the envisioned slight increase in period fertility rates combined with a continuation of sizeable immigration implies that the frequently projected population decline of Europe and the European Union in particular may not occur in the foreseeable future, at least not until 2050²⁰. This possibility finds support in a recent projection for the EU-15 countries, Norway, Iceland and Switzerland by Alho et al. (2006), which assumes a higher life expectancy and higher immigration levels than the past projections by the United Nations and Eurostat. However, as this and other studies show, population ageing is certain to continue and governments should pursue a mix of strategies for reducing its expected negative influences (Bongaarts 2004).

6.4. European Union vs. the United States: The exaggerated fears of European decline

When speculating about the future of European population, van de Kaa (1999: 35) proposed that the second demographic transition was likely to become 'permanent'. This suggestion remains at least as plausible now as it was almost a decade ago. If the arguments pursued in this article are correct, a further progression of the SDT should not have a negative impact on fertility rates. On the contrary, in some countries with very low fertility, further advancement of the SDT might indeed have a beneficial effect on fertility rates as it will broaden the choice of generally accepted pathways to have children and lift some obstacles to childbearing. This effect may be partly counterbalanced by declining fertility preferences in countries that have experienced a prolonged period of very low fertility (Lutz, Skirbekk and Testa 2006). European regions will almost certainly continue to experience divergent pathways in their fertility, migration and population trends.

The fears of a European demographic decline and marginalisation may be exaggerated. Paul Demeny (2003: 14) proposed that "European demographic marginalization is fait accompli, one that is bound to be further accentuated during the present century." This statement is valid on a continent-wide perspective, but Europe has never been a unified

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18 A comparative study by Jennissen (2004) concluded that GDP per capita and unemployment are important determinants of migration levels in Europe.

19 This increase in immigration has already been recorded in some countries of Central Europe. The Czech Republic has seen a steady rise in registered net migration from around 10 thousand in the mid-1990s (0.10%) to 35 thousand in 2006 (0.34%, CZSO 2007).

20 The baseline scenario of the most recent Eurostat projection published in 2006—EUROPOP2004 (Eurostat 2006c)—anticipates that the EU will experience a population decline by 2025.

entity with coherent social or political organisation. It is only in the last half century that an unprecedented economic and political integration has been taking place across Europe, symbolised by the rise of the European Union. Despite its heavy bureaucracy and profound disagreement between its members even on the basic facets of its status and purpose (also embodied in the recent disputes about the EU constitution), the successful extensions of the EU, the creation of the common monetary union and the establishment of the common border agreement are not suggestive of a civilisation in decline (van de Kaa 1999). When compared with the United States—the usual and the most meaningful unit of reference—the continuing expansion has given European Union a sizeable lead in population size as well as the ability to ‘catch up’ with the US in the overall economic power (Figures AP1 and AP2 in Appendix).

In contrast to the commonly accepted view that an extensive welfare system with high taxation may be too obtrusive for economic prosperity and competitiveness, recent analysis by Aiginger (2005) found that three Nordic countries of Europe, Denmark, Finland, and Sweden, can be ranked as the three best economic performers (as measured by output growth, productivity growth, and employment rate) in the EU-15 in 1993-2002. He suggests that “there may be a new kind of reformed European model, which combines welfare and sustainability on the one hand with efficiency and economic incentives on the other” (Aiginger 2005: 113). This finding adds another layer to my speculations about the future of Europe’s populations: the social welfare model which embodies many values that are at the heart of European distinctiveness (individualised and rather broad welfare coverage, gender equality, high value of the quality of life and environmental protection) appears effective and sustainable. This model is compatible with the second demographic transition, and, at the same time, conducive to higher fertility. Thus the renewed fears of a European low fertility crisis, a population slump and the demise of the European welfare state remain largely unsubstantiated.

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9. Appendix

Construction of the SDT indexes used in the analysis in Section 4

- SDT1 index (demographic dimension)

This index, composed for 34 countries, is based on the following indicators for 2004 (or the latest year available):

- 1) Mean age of mother at birth of first child (MAFB);
- 2) Sum of age-specific fertility rates below age 20, per 1000 women (TEENFERT);
- 3) Percentage of non-marital births (NONMAR);
- 4) Total first marriage rate (TFMR);
- 5) Mean age at first marriage (MAFM);
- 6) Total divorce rate (TDR).

Finally, the index is adjusted upwards by 0.5 if more than 10 per cent of coresidential unions were made up by cohabiting couples (data for 2001 based on Philipov 2005 and national data sources). Maximum, minimum and mean values of these indicators and the assigned SDT scores are displayed in Table AP-2.

- SDT2 index (attitudes and values dimension)

This index is based on the 1999/2000 results of the European Values Study, published in Halman (2001). It is based on the responses in 29 countries to the following questions and statements.:

- 1) "...how important it is in your life: leisure time" (LEISURE, % "very important")
- 2) "How often do you spend time in church, mosque, or synagogue" (CHURCH, % "every week");
- 3) "Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out?" (CONTROL, mean value on the scale of 1 (=none control at all) to 10 (= a great deal of control));
- 4) "Do you think that a woman has to have children in order to be fulfilled or is this not necessary?" (NEED_KIDS, % responses "not necessary");
- 5) "Marriage is an outdated institution" (MARRIAGE, % "agree");
- 6) "A job is alright, but what women really want is a home and children" (F_HOME, % "agree strongly");
- 7) "One does not have the duty to respect and love parents who have not earned it by their behaviour and attitudes" (PAR_RESPECT, % "agree");
- 8) "Do you approve or disapprove abortion (...) where a married couple does not want to have any more children?" (ABORTION, % "approve").

Several questions were not asked in all the participating countries; the SDT2 index for these countries was based on the mean score of the responses to the remaining items. Maximum, minimum and mean values of these indicators and the assigned SDT scores are displayed in Table AP-2.

Table AP-1: SDT indexes and demographic indicators used in the regression analysis in section 4

↓

	SDT indexes			Demographic indicators			
	SDT1 (2004)	SDT2 (2000)	SDT-C (2000, 2004)	TFR (2004)	TFRadj (2002)	MAFB (2004)	Intended TFR ¹⁾ (2006)
WESTERN EUROPE							
Austria	6.9	6.5	6.7	1.42	1.63	27.04	1.54
France	7.6	5.9	6.8	1.91	2.02	28.5 ²⁾	2.36
Germany	6.6	6.3	6.5	1.36	1.51	28.5 ²⁾	1.91
Ireland	5.0	5.4	5.2	1.93	2.22	28.53	2.76
Luxembourg	7.0	6.6	6.8	1.69	1.83	28.65	2.18
Netherlands	7.4	7.8	7.6	1.73	1.82	28.88	2.30
Switzerland	6.4	...	...	1.41	1.69	29.0 ²⁾	...
United Kingdom	6.4	7.4	6.9	1.77	1.85	27.0 ²⁾	2.38
NORTHERN EUROPE							
Denmark	7.5	8.4	7.9	1.78	2.00	28.37	2.24
Finland	7.2	7.1	7.1	1.80	1.88	28.0 ²⁾	2.62
Norway	8.0	...	...	1.83	2.07	27.60	...
Sweden	8.8	8.3	8.6	1.75	1.91	28.64	2.27
Iceland	7.1	6.5	6.8	2.04	2.33	26.17	...
SOUTHERN EUROPE							
Greece	3.9	4.3	4.1	1.29	1.49	28.2 ²⁾	2.09
Italy	5.1	4.2	4.6	1.33	1.41	29.0 ²⁾	1.76
Portugal	4.9	3.7	4.3	1.40	1.80	27.15	2.06
Spain	5.4	5.1	5.2	1.32	1.33	29.3	1.73
CENTRAL-EASTERN EUROPE							
Croatia	3.1	4.7	3.9	1.35	1.64	26.3 ²⁾	2.13
Czech Republic	6.0	5.6	5.8	1.23	1.67	26.31	1.98
Hungary	5.5	4.0	4.8	1.28	1.76	26.27	2.42
Poland	3.7	2.4	3.1	1.23	1.64	25.55	2.12
Slovak Republic	4.0	4.4	4.2	1.24	1.60	25.34	1.88
Slovenia	7.2	6.4	6.8	1.25	1.63	27.46	2.08

	SDT indexes			Demographic indicators			
	SDT1 (2004)	SDT2 (2000)	SDT-C (2000, 2004)	TFR (2004)	TFRadj (2002)	MAFB (2004)	Intended TFR ¹⁾ (2006)
SOUTH-EASTERN EUROPE							
Bulgaria	3.8	4.4	4.1	1.29	1.53	24.38	2.17
Romania	1.7	3.3	2.5	1.29	1.58	24.4 ²⁾	1.71
BALTIC REPUBLICS							
Estonia	6.5	4.2	5.3	1.47	1.70 ²⁾	25.0 ²⁾	2.20
Latvia	4.8	3.0	3.9	1.24	1.56	24.71	2.14
Lithuania	4.2	4.5	4.3	1.26	1.66	24.82	2.11
EASTERN EUROPE							
Belarus	3.2	3.2	3.2	1.20	1.44	23.97	...
Moldova	3.3	...	...	1.25	1.65	23.29	...
Russia	3.6	4.1	3.8	1.33	1.47	23.98	...
Ukraine	2.8	3.3	3.0	1.22	1.36	23.53	...
MIN	1.7	2.4	2.5	1.20	1.33	23.29	1.54
MAX	8.8	8.4	8.6	2.04	2.33	29.30	2.76
MEAN	5.3	5.2	5.3	1.46	1.70	26.69	2.13

Notes: 1) Mean intended family size among women aged 25-39, Eurobarometer survey 2006 (Testa 2006: 63, Table 12); 2) Estimated values

Sources: Council of Europe (2006); Eurostat (2006a and 2006b), Eurostat (2007), Halman (2001), Philipov (2005), Testa (2006), and national statistical offices.

Table AP-2: Variables used for computing the SDT indexes: Mean, maximum, minimum and threshold values for selected SDT scores (0, 5, and 10)

↓

Variable	Values of SDT scores			Observed values			Mean SDT score
	SDT score=0	SDT score=5	SDT score=10	MIN	MAX	MEAN	
Index SDT1							
MAFB	<24	27	>30	23.29	29.30	26.60	4.3
TEENFERT	>180	90	0	26.0	209.3	84.4	5.3
NONMAR	0	30	>60	4.9	63.7	32.0	5.3
TFMR	>0.80	0.60	<0.40	0.405	0.826	0.577	5.6
MAFM	<23	27	>31	22.91	30.90	26.72	4.6
TDR	<0.15	0.35	>0.55	0.11	0.55	0.36	5.2
LEISURE	<16	32	>48	15.5	54.2	31.5	4.8
CHURCH	>30	15	0	3.1	34.2	14.8	5.2
CONTROL	<5.3	6.4	>7.5	5.4	7.6	6.7	6.2
NEED_KIDS	<5	45	>85	5.9	92.9	45.9	5.1
MARRIAGE	<6	20	>34	8.3	36.3	18.7	4.5
F_HOME	>35	20	<5	3.0	34.1	17.4	5.8
PAR_RESPECT	0	30	>60	13.5	67.3	29.6	4.9
ABORTION	<20	55	>90	15.2	85.1	56.9	5.3

Source: Halman (2001)

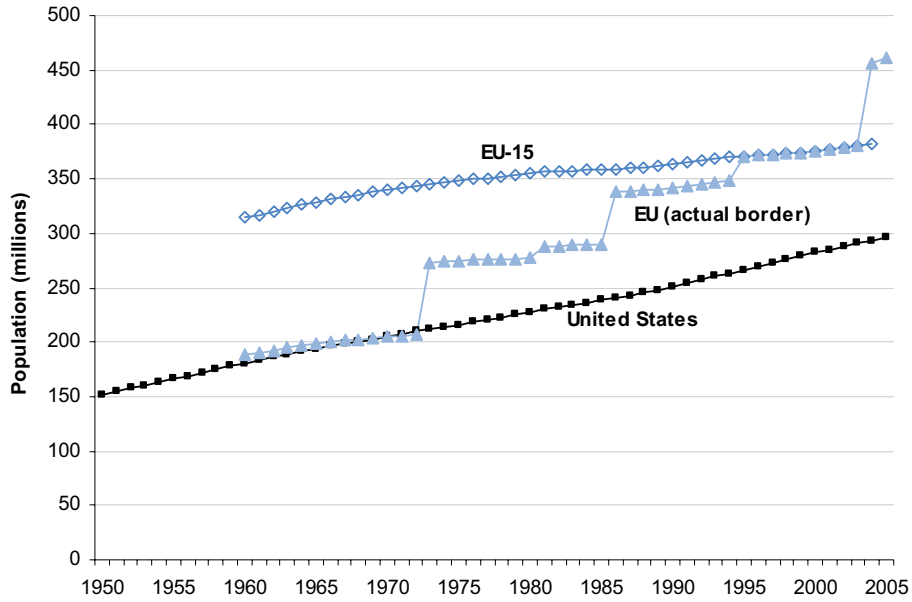


Figure AP1: Population size of the European Union and the United States, 1950 (1960)-2005
 Sources: Council of Europe (2006), Eurostat (2006a and 2007), US Census Bureau (2007)

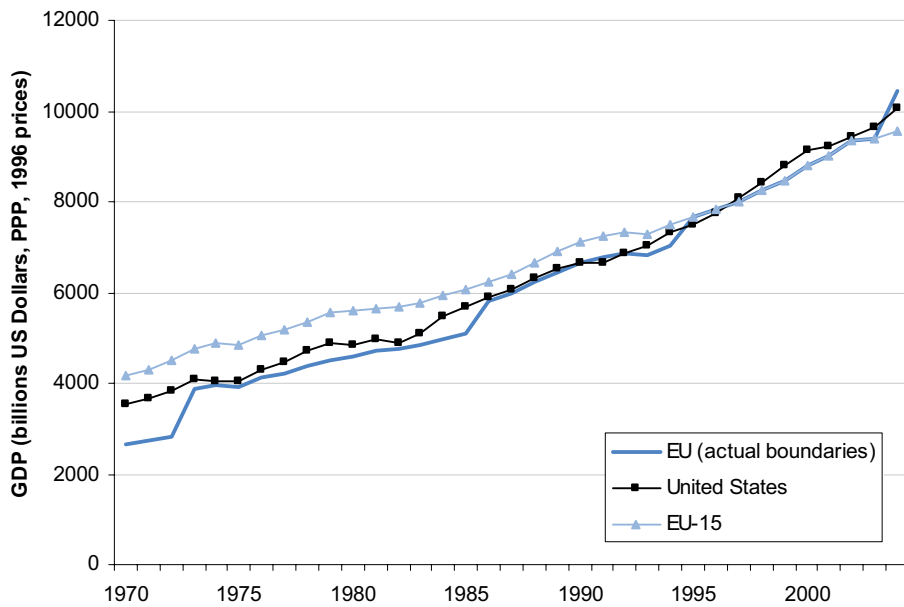


Figure AP2: GDP in purchasing power parity (billion US dollars) in the European Union and the United States, 1970-2004 (prices computed in the 1996 levels)

