

Fertility in Austria, Germany and Switzerland: Is there a Common Pattern?*

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Abstract: This article reviews major similarities and differences in period and cohort fertility in Austria, Germany and Switzerland. These three countries share a long history of low fertility and currently belong to countries with the lowest cohort fertility rates globally. The study highlights persistent differences in fertility and family patterns between Eastern and Western Germany, which are often rooted in pre-unification contrasts and can be partly linked to continuing differences in institutional set-up and norms on organised childcare, living arrangements and maternal employment. The remarkable stability in period fertility over the last 30 years (with the exception of Eastern Germany) is illustrated with various indicators and discussed on the backdrop of recent reversals in European fertility trends. This stability in fertility levels contrasts with the long-term shift in childbearing towards less stable living arrangements (especially in Eastern Germany), including a high share of single mothers. The study also discusses a relatively small but persistent negative impact of the ongoing shift towards a late timing of childbearing on period fertility in the region. It highlights the educational gradient in fertility, which can be largely attributed to elevated childlessness rates among women with a higher educational degree. Migrant women have on average higher fertility rates than “native-born” women, but their net positive impact on aggregate fertility rates has diminished over time and has become negligible in Germany. A concluding discussion suggests that Austria, Germany and Switzerland share a common pattern of low fertility that sets these countries apart from other regions in Europe.

Keywords: Fertility · Family · Childlessness · Austria · Germany · Switzerland

* This article contains supplementary materials in the form of an online Appendix: DOI 10.4232/10.CPoS-2011-12en, URL: <http://www.comparativepopulationstudies.de/index.php/CPoS/article/view/81/77>.

1 Introduction

Austria, Germany and Switzerland, with a combined population of 98 million as of 2011, generally experienced fertility trends comparable to most other “Western” countries after World War II. The baby boom that peaked in 1963-64 was followed by a steep fall in fertility rates in the late 1960s and early 1970s, which paved the way to the subsequent period of stable and persistently low fertility. Despite many similarities with Western Europe and Nordic countries, a number of distinct fertility developments in these three countries can be pointed out, especially in Germany, which is with a population of 82 million the most populous country of the European Union. First, fertility rates have been lower than in most other regions of Europe since the 1920s and the fall in fertility rates after 1964 took place somewhat earlier and with a higher intensity than in other regions of Europe. Second, fertility has remained at similar very low levels since the mid-1970s, largely unaffected by the upswings and down drifts typical for many other regions of Europe. Third, low fertility in Austria, Switzerland and Western Germany is largely attributable to the high level of childlessness, especially among the highly educated women. Fourth, low fertility in Austria and Germany to a large extent appears to be linked to relatively low family size intentions and ideals, which are below the level found in most other countries in Europe (*Goldstein et al.* 2003; *Sobotka* 2009). As a result of a prolonged period of low fertility, these populations have aged rapidly, especially in Germany, which together with Japan and Italy has the highest median age globally (*UN* 2011). In addition, Germany has experienced a negative balance of births and deaths since 1972. These two trends, progressing faster and longer than in most other countries of the European Union, have been fuelling debates about imminent population shrinking and its consequences, which have been vividly portrayed by the media and some population researchers.

At the same time, important contrasts exist within and between the three countries. In particular, notable differences in fertility patterns between Eastern Germany (former German Democratic Republic) and Western Germany (former Federal Republic of Germany) have not faded away even 20 years after the German unification in 1990.

This paper aims to provide systematic evidence of major similarities and differences in fertility in Austria, Germany and Switzerland, keeping an eye on broader trends in other selected countries and regions of Europe. Besides mapping period and cohort fertility developments, I also pay attention to developments of parity distribution, childlessness, family context of childbearing as well as migrants’ fertility and educational differentials in fertility. Given the prominent attention in social science research to the persistent differences between Eastern and Western Germany, this study often provides a separate analysis for these two regions. This review sets the stage for more detailed analyses and discussions provided in the subsequent articles in this special issue (CPoS 36,2-3).

2 Fertility in Austria, Germany and Switzerland: A broad view

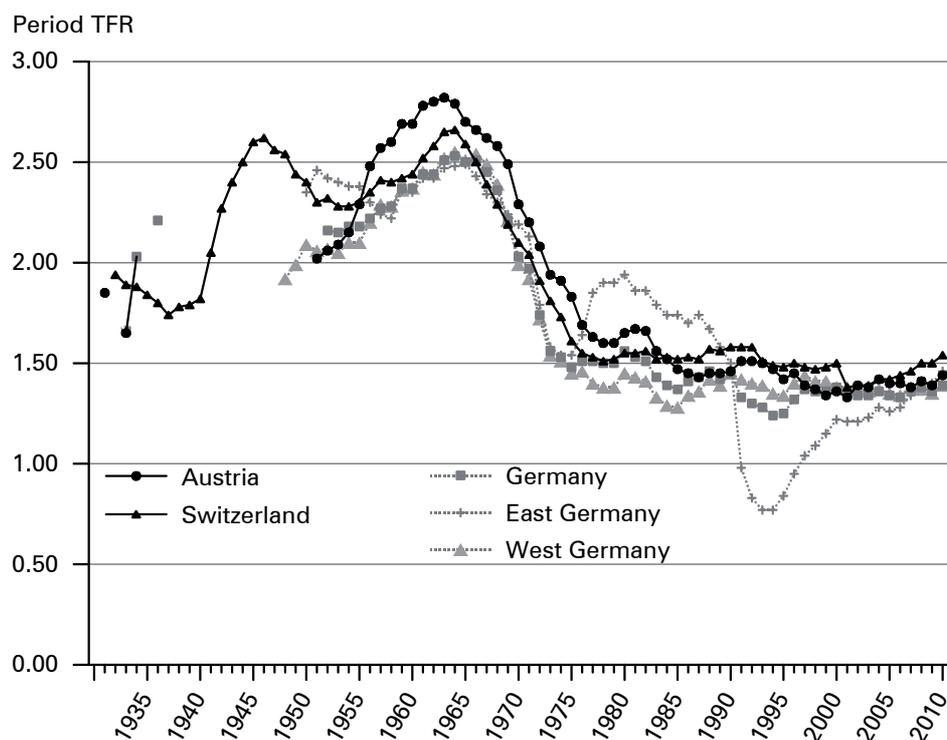
2.1 Long-term shifts in period fertility

Low fertility in Austria, Germany and Switzerland is not a new phenomenon. The late stage of the demographic transition has overlapped with the deep economic crisis during the Great Depression, which in turn stimulated the postponement of childbearing. In combination, these factors resulted in unusually low fertility rates in the early 1930s, when the period Total Fertility Rate (TFR) tumbled to 1.65-1.66 in Austria in 1933-34 as well as in Germany in 1933 and to 1.74 in Switzerland in 1937 (*League of Nations* 1940: 46 (Table 9); *Kirk* 1946; *SFSO* 1998; German TFR estimated on the basis of the net reproduction rates in 1933 and 1934 and the TFR in 1934). Only a few other countries of Europe with known fertility data recorded similarly low TFR levels at that time.

After the Second World War, fertility trends in Austria, Germany and Switzerland followed a remarkably similar course. All three countries experienced a small baby-boom during the late 1950s and the early 1960s (Fig. 1). The period TFR in Austria peaked at 2.8 in 1961-1964, Germany's peak TFR of 2.5 occurred in 1963-1967, and Switzerland's peak TFR of 2.7 took place in 1963-1964. A steep fertility decline followed during the late 1960s and early 1970s. In the 1970s, a long trend towards delayed childbearing set in, which has pushed the timing of first motherhood to ever later ages, and depressed the level of the period TFR below that of the corresponding completed cohort fertility rates (CTFR, see Section 2.2). In all three countries the TFR fell below the replacement level threshold around 1970 and the decline continued until the mid- to late-1970s, with a period TFR falling to 1.5-1.6. The Federal Republic of Germany (Western Germany) was the first European country experiencing a TFR fall below 1.5 in 1975 and a brief decline below 1.3 a decade later. From the late 1970s through to the late 2000s, fertility underwent small fluctuations, but a general trend (except in Eastern Germany) can be characterised by stable low levels, often contrasting with stronger shifts in other European countries (see also online Appendix 2, in CPoS 36,2-3). The three German-speaking countries of Europe thus represent best what *Caldwell* (2008) termed a "third fertility compromise": More than three decades of remarkably stable fertility and gradually unfolding family and social trends, when, arguably, a "marginally bearable compromise" has been achieved in the balance between job careers and domestic work for mothers as well as between child costs and fertility aspirations for couples.

In 2010, the period TFR remained relatively low in the three analysed countries, ranging from 1.39 in Germany to 1.54 in Switzerland;¹ these values are slightly above the record lows reached between 1994 (1.24 in Germany) and 2001 (1.33 in Austria and 1.39 in Switzerland). The data for Germany, however, are an amalgam of values

¹ Period TFRs have been negatively affected by the changes in the timing of childbearing; see Section 4, Table 2 and Figure A1 in Online Appendix 1 (in CPoS 36,2-3) for alternative estimates of fertility rates unaffected by these timing shifts.

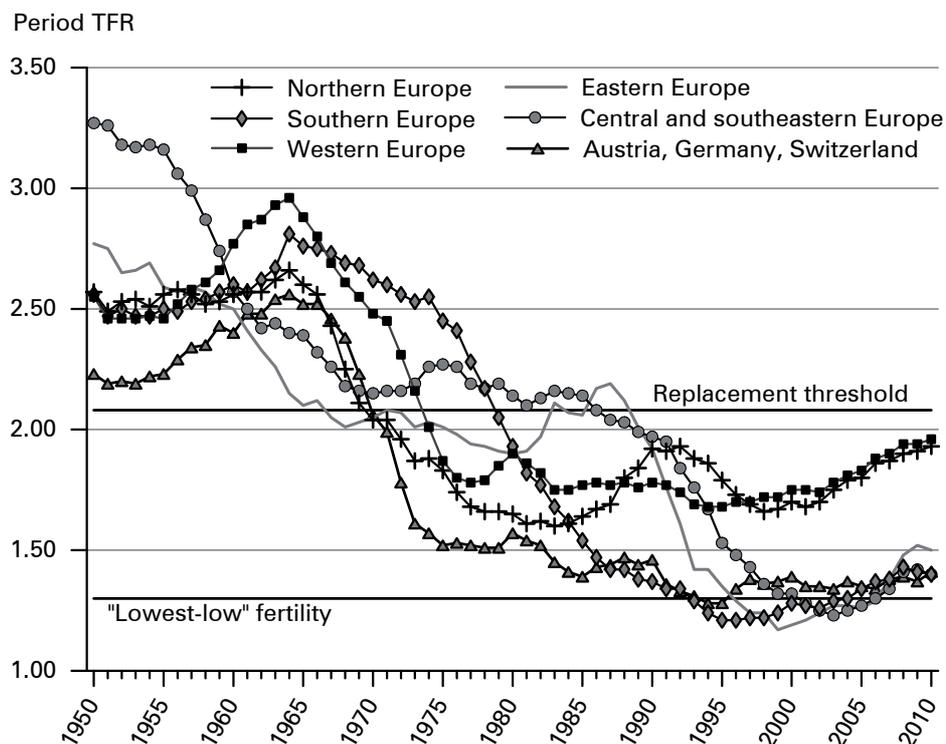
Fig. 1: Period Total Fertility Rate in Austria, Germany and Switzerland, 1930-2010

Source: Council of Europe (2006); Eurostat (2010 and 2011); Human Fertility Database (2011); SFSO (1998); League of Nations (1940); Statistisches Bundesamt (2011).

for the former Federal Republic of Germany combined with those for the former German Democratic Republic, referred to as Eastern Germany (or *neue Länder* in German). Childbearing patterns were very different in the two German republics, not only prior to reunification in 1990 and during the subsequent “demographic shocks” in Eastern Germany (Conrad *et al.* 1996) when a record low level of 0.77 was reached in 1993-94, but even during the 1990s and 2000s (Section 4). During these two decades, fertility patterns in the two parts of Germany have become more similar, with a huge period TFR increase in Eastern Germany, surpassing the West German level since 2008 (Fig. 1; Goldstein/Kreyenfeld 2011; Statistisches Bundesamt 2011). Yet even though recent fertility levels converged to similar levels, the underlying patterns of childbearing behaviour were shaped by the differing social, economic and institutional environments in the two parts of Germany (Konietzka/Kreyenfeld 2002; Kreyenfeld 2005 and 2010; Dorbritz 2008; Cassens *et al.* 2009; Goldstein/Kreyenfeld 2011).

A comparison of Austria, Germany and Switzerland with their neighbours and with other regions in Europe demonstrates that they are among the countries with

Fig. 2: Period total fertility rate in broader European regions (1950-2010)



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

Countries are grouped into regions as follows:

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

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

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

Central-Eastern Europe: Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Bosnia-Herzegovina, Bulgaria, Macedonia, Montenegro, Romania, and Serbia & Kosovo;

Eastern Europe: Belarus, Moldova, Russia, and Ukraine.

Source: *Council of Europe* (2006); *Festy* (1979); *Chesnais* (1992); computations based on *Eurostat* (2010) and national statistical offices.

the lowest fertility in Europe. While long-term trends were often similar to the developments in Northern and Western Europe until the 1980s (Fig. 2), none of the Western and Northern European countries experienced an extended period of similarly low fertility. For instance, the Netherlands briefly saw a period TFR falling below 1.5 in 1982-84, but a subsequent gradual recovery brought its level to 1.80 in 2010. Similar trends were also recorded in Belgium. Among other countries neighbour-

ing Germany to the West and North, Denmark reached a TFR of 1.88 in 2010 and France recorded a TFR of 2.00 in 2010, close to the replacement-level threshold of 2.08. In comparison, countries in Southern Europe and the formerly state-socialist countries of Central Europe experienced “lowest-low fertility rates” below 1.3 in the late 1990s and early 2000s, but in many of them the TFR rose slightly above that in Austria and Germany by 2008. In fact, recent fertility trends in Austria and Western Germany stand out for their rather limited “recovery” after 2000, which has taken place in most other European countries with both lower and higher fertility levels (*Goldstein et al.* 2009).

While this contribution mostly focuses on fertility developments at a national level, it is worth emphasising that fertility rates at the sub-national level have undergone a remarkable convergence between the 1930s and the early 2000s in all of the three analysed countries, reaching some of the lowest levels of within-country variation in Europe (see *Basten et al.*, in CPoS 36,2-3). Illustrative of this broad convergence is the convergence in the fertility level between the city of Vienna and other regions of Austria, which has brought an end to the long-lasting distinctiveness of Vienna as a region with the lowest fertility in Austria, where period fertility rates were about 50 % below those for the whole country in the 1950s (*Zeman et al.* 2011).

2.2 A history of low completed cohort fertility

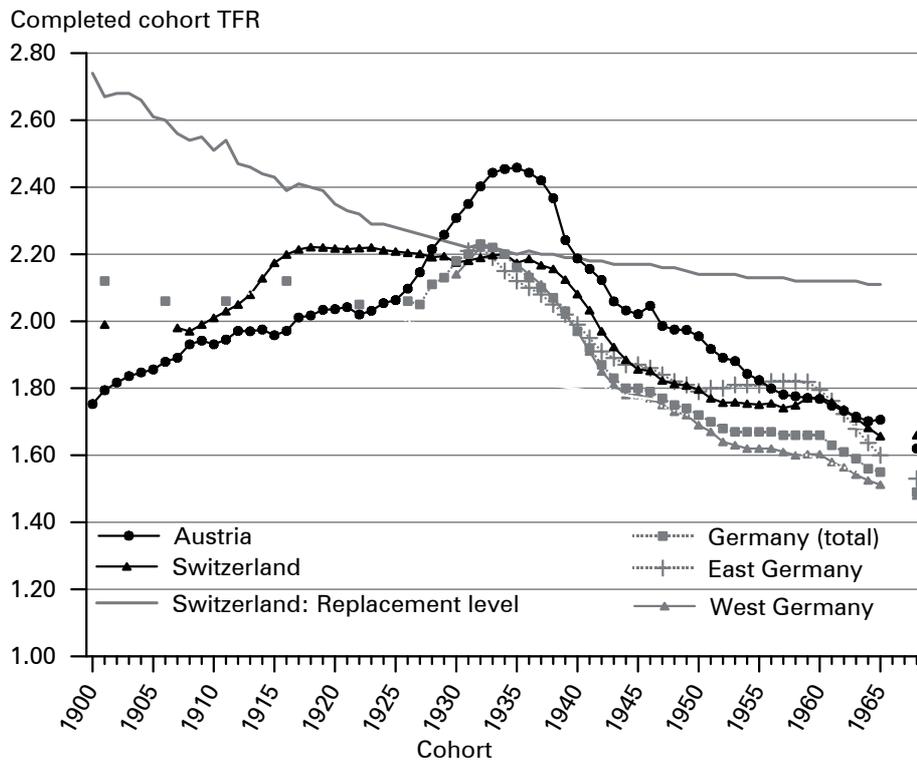
In correspondence to the period fertility trends, historically low completed fertility rates were reached in the three analysed countries already among women born at the turn of the 19th and 20th century (*Festy* 1979). Among women born in 1901, completed fertility ranged from 2.1 children per woman in Germany through 2.0 in Switzerland to the low value of 1.8 in Austria. These levels should be interpreted with a view of high infant and child mortality at that time, which implies that all three countries had cohort fertility well below the replacement level threshold. For instance, replacement level cohort fertility in Switzerland is estimated at 2.7 children per woman for women born in 1901 as compared to 2.11 among the mid-1960s cohorts (*Sardon* 1991 and own computations based on *Human Mortality Database* 2010). As a result, the completed fertility in the early 20th century cohorts was 25 % short of the replacement level in Switzerland, 30 % below replacement in Germany and even 33 % below replacement in Austria (*Sardon* 1991 and own computations; Austrian values are estimated assuming the same female cohort mortality rates as in Switzerland).

The post-war baby boom constituted a marked interruption of the declining fertility level, with a particularly pronounced fertility peak in Austria, where the cohort of 1935 reached completed fertility of 2.46 children per woman. Germany had a less prominent peak in the early 1930s cohorts that reached a completed fertility of 2.2, whereas in Switzerland a similar fertility level was reached among a broad range of cohorts born in 1915-1938 (*Frejka/Sardon* 2004). The baby-boom cohorts are unique in surpassing (Austria) or at least briefly reaching (Germany and Switzerland) replacement level fertility. No other cohorts of women born in the course of the 20th

century in these three countries have come close or are likely to come close to the replacement level.

Subsequently, a prolonged period of low fertility resulted in a continuous fall in completed fertility, interrupted by occasional brief plateaus in Germany and Switzerland. Among all the birth cohorts from 1935 through those of the 1960s, Germany had the lowest completed fertility (Fig. 3). According to the *European Demographic Data Sheet (VID-IIASA 2010)* the completed fertility among women in Germany born in 1968 is estimated at 1.49 children per woman, representing the lowest cohort fertility in Europe, followed by Italy (1.52), Spain (1.53), and Russia (1.57). This low level contrasts strongly with most of the neighbouring countries, especially France,

Fig. 3: Completed cohort fertility rate in Austria, Germany and Switzerland; women born in 1900-1968



Notes: Data for Germany for the cohorts up until 1922 represent completed fertility for 5-year birth cohorts centred on a given year of birth.

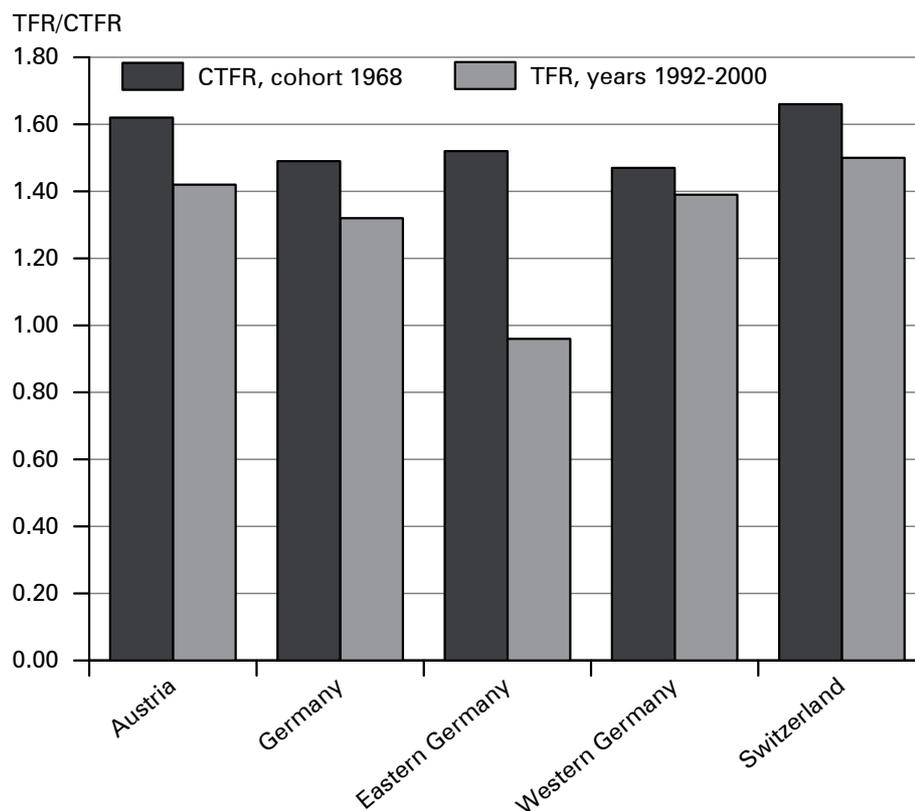
Replacement fertility level in Switzerland was computed from the cohort mortality data and sex ratio at birth in the Human Mortality Database, assuming a mean age at childbearing of 30 years. These computations are generally insensitive to the precise level of this indicator, however.

Source: *Human Fertility Database* (2011); *Human Mortality Database* (2010); Prskawetz et al. (2008); SFSO (1998); Council of Europe (2006); Sardon (1991); Pötzsch (2010); VID-IIASA (2010) for the 1968 cohort.

where the completed fertility remained just above 2.0. Women in Austria and Switzerland retain slightly higher completed fertility than women in Germany, with the 1968 cohort having on average 1.62 and 1.66 children per woman, respectively. In all of the three analysed countries (except in the region of Eastern Germany) low completed fertility rates go hand in hand with relatively high childlessness levels (see Section 3).

As with period fertility, cohort data for Germany represent a weighted average for the two German states that existed after the Second World War. While West German women born in the 1950s had the lowest completed fertility in Europe with around 1.6 children per woman, East German women retained a comparatively higher completed fertility just above 1.8. However, the fall of the state-socialist system brought a marked decline in completed fertility in Eastern Germany among the post-1960 cohorts, bringing their fertility level down to 1.6 in the 1965 cohort

Fig. 4: Completed cohort CTFR (women born in 1968) and the period TFR in 1992-2000



Notes: A small portion of completed fertility rates at ages 41+ was estimated.

Source: *Human Fertility Database* (HFD 2011); *Council of Europe* (2006); *VID-IIASA* (2010) and own computations based on the HFD.

(Pötzsch 2010), and thus also much closer to the completed fertility among women in Western Germany.

Despite its long-lasting decline, completed cohort fertility rates remained above period TFRs in the analysed countries. Figure 4 compares completed fertility among women born in 1968 (with a small portion of fertility above age 40 estimated) and the average period TFR in 1992-2000, when these women were in their peak child-bearing ages. While TFRs fell below the corresponding completed CTFRs due to the shifting age at childbearing (causing a negative “tempo distortion” in the TFR, see Section 4), the difference between the two indicators was rather modest, 0.16 (Switzerland) to 0.20 (Austria) in absolute terms. Eastern Germany stands out however, for its major mismatch between the average period TFR of 0.96 and a substantially higher completed CTFR of 1.52. This mismatch, which is largely explained by a profound change in the timing of births (Section 4), shows that the period TFR can be a very poor “predictor” of completed cohort fertility and that extremely low period fertility rates do not necessarily imply very low cohort fertility rates.

3 Cohort parity distribution and the recent cohort fertility trends

3.1 Cohort parity trends: The persistence of a two-child family model and rising childlessness

As in other parts of Europe, a two-child family model has become increasingly prevalent in the three analysed countries throughout much of the 20th century (Frejka/Sardon 2004). Cohort data indicate that four out of ten Austrian, German and Swiss women born in the mid-1960s gave birth to two children as compared to about a quarter of women born in 1920 (data available for Austria and Switzerland only).² However, with the exception of Austria, the share of two-child families already peaked among women born in the 1940s-1950s (Fig. 5). This earlier peak was most apparent in Eastern Germany, where – similar to many other formerly state-socialist countries of Central and Eastern Europe – the “norm” of a two-child family became especially strong (Sobotka 2011) and every second woman born in 1949-58 had two children by the end of her reproductive span. In more recent cohorts, the East German fertility decline after German unification has been marked by a steady rise in the share of women with only one child that reached 36 % in the 1964-68 cohorts (2008 *Microcensus* data, *Statistisches Bundesamt* 2009). As a result, one-child families in Eastern Germany have become almost as frequent as families with two children, a trend confirmed also with the recent and yet incomplete data for women born in the early 1970s, among whom the share with one child at 37 % equalled

² The data provided in this section are based on a variety of sources, often combining census data with vital statistics records and representative surveys (see sources below Fig. 5). Due to this variability, the results presented should be treated with caution and should be seen as best estimates of the cohort parity distributions and trends. For more details on the available data and their potential weaknesses, see *Kreyenfeld et al.* 2011, in *CPoS* 36,2-3.

that with two children at ages 36-40 (*Statistisches Bundesamt* 2009). In contrast to Eastern Germany, the share of women with one child has slightly declined among the post-1950 cohorts in Western Germany, where it is estimated at 23 % in the late 1960s cohorts, and it remained stable in Austria and Switzerland.

While the trend in the share of one-child families remains relatively little discussed, rising childlessness has attracted ample attention in the media, in political debates as well as among some experts.³ This is particularly the case in Germany, where the debate focused on interrelated topics of high actual and intended childlessness (*Konietzka/Kreyenfeld* 2007; *Dorbritz/Ruckdeschel* 2007; *Sobotka/Testa* 2008), and to what extent it is a voluntary phenomenon (*Dorbritz/Schwarz* 1996; *Stöbel-Richter et al.* 2005), especially among university educated women (*Kemkes-Grottenthaler* 2003; *Wirth/Dümmler* 2005; see also Section 6 below). More broadly, the debate in Germany often links voluntary childlessness to the rapid rise in the percentage of singles and unpartnered (*Eckhard* 2006; *Dorbritz* 2003, 2008), espoused in the notions of “generation single” and “singles-society” (see also section 5 below).⁴ With childlessness above 20 % and still rising in the late 1960s cohorts, Western Germany and Switzerland belong to the regions with the highest childlessness globally. In Austria, childlessness rates are only slightly lower, reaching 19 % among women born in 1968.⁵ At the same time, current childlessness rates are not anywhere near to their historically highest levels (*Schwarz* 2003). Childlessness was common in the past and reached particularly high levels among women born in the early 20th century. Available data show that over a quarter of Austrian and German women born in 1900-1905 and of Swiss women born in 1910 remained permanently childless. In contemporary terminology, historical childlessness could mostly be classified as “involuntary”, driven by a set of factors, including high rates of non-marriage (“celibacy”) typical of economically disadvantaged women, delayed mar-

³ Besides ample attention in the German media, the issue has been also noted outside Germany. For instance, in 2006 the Guardian published an article by Luke Harding titled “Germany agonises over 30 % childless women” and claiming that the “highest number in world choose not to have family” (<http://www.guardian.co.uk/world/2006/jan/27/germany.lukeharding>)

⁴ For many years, an aptly named website, www.single-generation.de, has featured articles, debates and comments on singles, childlessness and low birth rates in Germany. Several prominent non-fiction books have addressed these issues, including *Minimum*, written by a journalist Frank Schirrmacher, who laments an absence of families in German society and in the media coverage, and *Die ausgefallene Generation* (“The absent generation”) by a conservative demographer Herwig Birg. Also German fiction has often reflected on childlessness in the country. As early as 1980, a prominent German novelist Günter Grass wrote a book ironically titled *Headbirths, or the Germans are Dying out*.

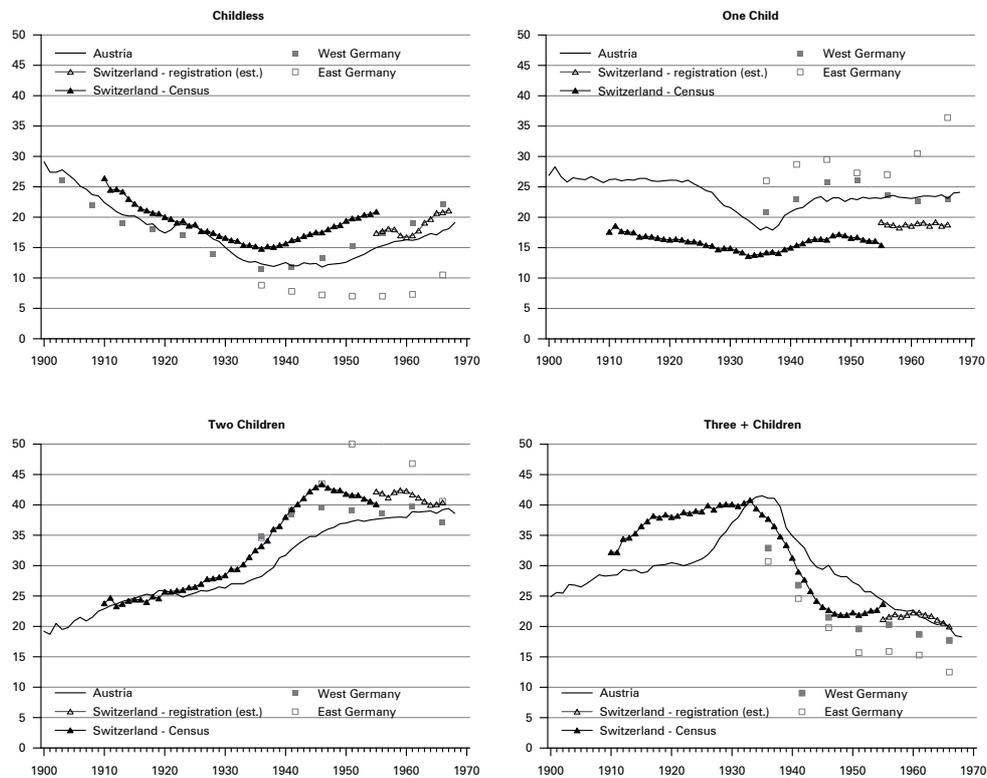
⁵ Childlessness is still higher among men, especially at younger reproductive ages, but only a few reliable data sets exist in the three analysed countries. In Austria, the *GGs* survey of 2008 found that men’s childlessness greatly surpassed that among women at ages 35-39, when 38 % of men and “only” 23 % of women remained childless, but the difference was small at ages 40-44 (21 % among men vs. 18 % among women; *Sobotka/Buber* 2009). In Germany, the 2001 *SOEP* data analysed by *Schmitt* (2004, Table 1-2) indicated only a minor difference in childlessness in post-reproductive ages (46+), when 15.8 % of men and 14.6 % of women in the sample were childless.

riage, spousal separation due to wars and labour migration, and infectious diseases (for Austria, see *Ehmer* 2011).

As childlessness has risen, the share of larger families with three or more children has declined steadily since peaking at around 40 % in the early 1930s cohorts in Austria and Switzerland (and somewhat lower in Germany). This share has been reduced to below 20 % among women born around 1968, with Eastern Germany exhibiting an extremely low proportion of women with three or more children, reaching 12 % in the 1964-68 cohorts (*Microcensus* 2008, based on *Statistisches Bundesamt* 2010). The shift in reproductive behaviour, increasingly targeting a goal of having two children, is also clearly illustrated by the trends in parity progression ratios (Fig. A1 in online Appendix 1, in CPoS 36,2-3). Except in Eastern Germany, the likelihood of having a second birth among women with one child remained stable and relatively high, at or above 0.70, among the cohorts born since the 1920s.⁶ In contrast, the third birth progression rate fell rapidly among the German and Swiss women born in the 1930s and 1940s and stabilised at a low level thereafter. In Austria, it declined gradually, reaching West German and Swiss levels slightly above 0.3 in the mid-1960s cohorts. In Eastern Germany, third birth parity progression rates are yet lower, implying that only a quarter of women with two children eventually have a third birth.

Given the prominent attention paid to childlessness, it is reasonable to ask to what extent its increase is “responsible” for the observed decline in completed fertility. Table A1 in online Appendix 1 (in CPoS 36,2-3) approaches this issue from three different angles. First, it asks what would the completed fertility of women born in the mid-1960s be without childlessness. In effect, this purely hypothetical question looks at the average family size of mothers. Second, it looks at the absolute and relative contribution of rising childlessness to declining completed fertility between the cohorts born in 1940 and 1965. The former cohort still reached fertility rates close to the replacement level threshold – 2.0 children per woman in Germany, 2.1 in Switzerland and 2.2 in Austria. Third, it shows the hypothetical completed fertility of the women born in 1965 if childlessness in each of the analysed countries reached the level of the same cohort of women in Sweden, i.e., 12.5 %. With no childlessness, Austrian, West German, and Swiss women born in 1965 would have around two children on average, while in Eastern Germany, where the mean family size of mothers is small, completed fertility would be just short of the 1.8 threshold. Keeping childlessness constant at the level of the 1940 cohort or identical to that in Sweden does not make a large difference in completed fertility except in Western Germany, where this scenario “lifts” the completed fertility in the 1965 cohort from 1.5 to 1.7, implying that 44 % of observed cohort fertility decline was attributable to rising childlessness. Taken all together, rising childlessness had a non-negligible impact on the observed fertility decline, but the fall in Austria and Switzerland has

⁶ The parity progression ratio (PPR) represents a probability of having another birth among the women reaching a given parity. The second-birth PPR of 0.70 implies that 70 % of women who have ever had a first birth also eventually progressed to the second one.

Fig. 5: Cohort parity distribution, women born 1900-1968

Notes: Data for Austria are based on the 1991 Census data (cohorts 1900-1940), 2001 Census data (cohorts 1940-1955) and on a combination of the 2001 Census data with the vital statistics data for the period 2001-2008 (cohorts 1956-1968). Data for Germany are based on the 2008 Mikrozensus survey and pertain to 5-year cohort groups. Data for Switzerland for the cohorts 1910-1955 are based on the 2000 Census (computations excluding women with unknown number of children); additional series for the cohorts 1955-1965 is based on time series of period fertility data by birth order, estimated by Marion Burkimsher.

Source: Data and computations based on *Dorbritz/Schwarz* (1996), *Prskawetz et al.* (2008), *Statistisches Bundesamt* (2009), *Statistics Austria* (2005), *Human Fertility Database* (2011), and estimates of cohort fertility rates in Switzerland by birth order, provided by Marion Burkimsher.

been even more driven by the falling likelihood of having a third child and in Eastern Germany by declining second birth rates.

3.2 A likely stabilisation of completed fertility

When cohort fertility trends are analysed among women past the reproductive age, the long-term decline in completed cohort fertility in Austria, Germany and Switzerland has not yet come to an end (Section 2.2, Fig. 3). However, a look at the cumulat-

ed fertility rates among women in their early- to mid-30s as well as at the projections of completed fertility for women born in the 1970s, reveals an important trend: the fall in completed fertility is likely to come to an end among the early 1970s cohorts. Figure A2 (online Appendix 1, in CPoS 36,2-3) shows a gradual stabilisation in cumulated fertility rates among Austrian and West German women born after 1970. Among Swiss and East German women, the pace of cumulated fertility decline in the early 1970s cohorts has diminished markedly. Also the projections of completed fertility show a similar development. Austrian women born in 1975 are likely to have the same completed fertility of 1.6 as their older counterparts born in 1968, whereas in Germany a slight upturn is projected from a record-low completed fertility of 1.49 among the 1968 cohort (see also *Myrskylä et al.* 2012 and *Goldstein et al.* 2011, in CPoS 36,2-3). Only in Switzerland, cohort fertility is projected to decline slightly to the level around 1.6 births per woman. As Table 1 shows, this projected stabilisation is not limited to the three analysed countries. Completed fertility is projected to stabilise or slightly increase in a number of other Western and Northern European countries, including the countries neighbouring Austria, Germany and Switzerland to the West and North: Belgium, Denmark, France and the Netherlands (*Prioux et al.* 2010, Table A.5; *Myrskylä et al.* 2012, Table 2). Following the widespread trend of childbearing postponement among the cohorts born in the 1940s-1960s, this looming stabilisation may be interpreted as a result of a diminishing or stopping childbearing postponement combined with an increasing rate of fertility “recuperation”

Tab. 1: Completed fertility among women born in 1950-68 and projected completed fertility among women born in 1975, selected European countries

	Observed CTFR			Projected CTFR, cohort 1975			
	1950	1960	1968	Trend projection (Prioux et al. 2010)	Trend projection (Myrskylä et al. 2012)	Stable rates projection (Prioux et al. 2010)	Trend projection (recuperation index)
Austria	1.96	1.77	1.62	1.62	1.64	1.60	1.62
Germany	1.72	1.66	1.49	1.54	1.56	1.51	..
Switzerland	1.80	1.77	1.66	1.61	1.66	1.59	1.58
Belgium	1.83	1.86	1.85	1.86	1.88	1.81	..
Czech Republic	2.10	2.02	1.89	1.74	1.81	..	1.79
Denmark	1.90	1.90	1.97	1.97	1.98	1.95	..
France	2.11	2.11	2.01	2.04	2.02	2.00	..
Italy	1.89	1.67	1.52	1.44	1.45	1.38	..
the Netherlands	1.89	1.85	1.78	1.81	1.79	1.76	1.77
Poland	2.19	2.18	1.90	1.60	1.63	1.57	..

Source: *Human Fertility Database* (2011) and *Council of Europe* (2006) for observed CTFR, *Prioux et al.* (2010) and *Myrskylä et al.* for projected CTFR (first three columns) and *Sobotka et al.* (2011, in CPoS 36,2-3) for the trend projection based on the recuperation index (last column).

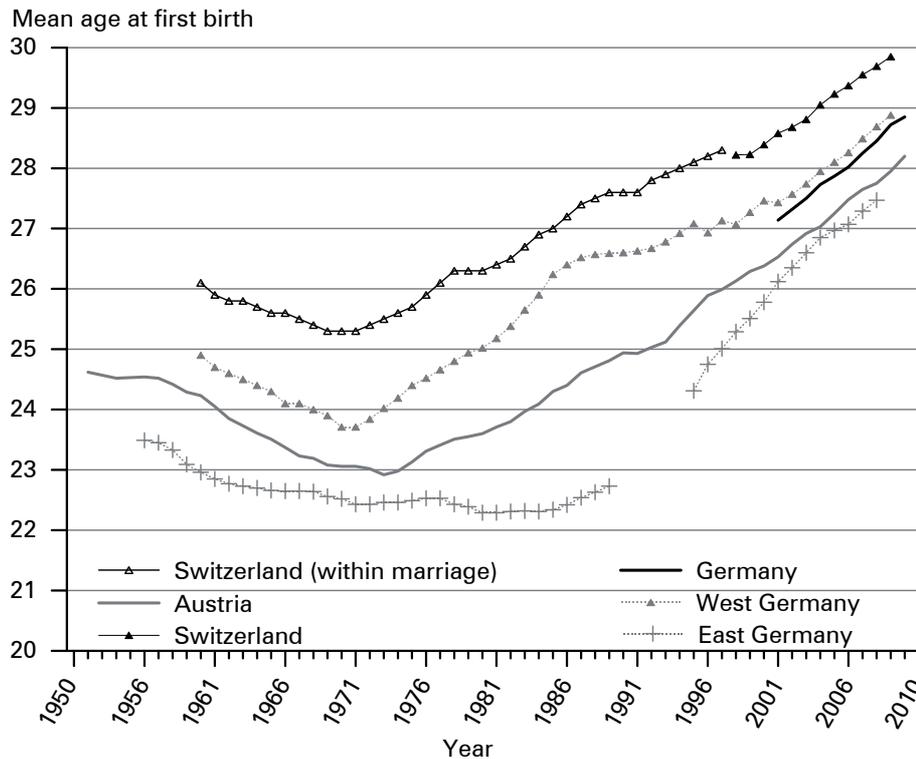
at higher childbearing ages among the younger cohorts analysed (see *Sobotka et al.* 2011, in CPoS 36,2-3).

4 Recent trends in period fertility: Continuing shifts in the timing of childbearing

With the exception of Eastern Germany, where period fertility rates underwent rapid changes after 1989, the three analysed countries have seen only minor changes in period total fertility during the last three decades (see Fig. 1 and Section 2). This conspicuous stability in fertility levels went hand in hand with an unfolding transformation towards a later timing of childbearing that was initiated in the early 1970s and has continued without interruption until now. This “postponement transition” (*Kohler et al.* 2002), partly facilitated by the spread of modern contraception, particularly the pill, but also by the rise of higher education, female labour force participation, reflexive values and the “gender revolution” (*van de Kaa* 1994; *Lesthaeghe* 1995; *Sobotka* 2004; *Goldin* 2006) has been analysed in detail from a cohort perspective by *Sobotka et al.* 2011, in CPoS 36,2-3. Figure 6 illustrates this timing shift from a period perspective, looking at the upturn in the mean age of mother at birth of the first child. This indicator reached a record low in the three compared countries in the early 1970s, when Austrian and German women entered motherhood at an early age of 22-24 years. Since then, first-time mothers have become 4-5 years older on average and this increase progressed almost linearly over time. While fertility rates have reached similar values in the three countries compared, some differences in the timing of first birth still persist: Switzerland currently has an oldest age at entering motherhood in Europe with the mean age at first birth approaching 30 (*VID-I/ASA* 2010), while, Eastern Germany and Austria exhibit somewhat younger childbearing pattern (mean age at first birth around age 28 in 2010.) While in many European countries the trend of rising mean age at childbearing has slowed-down or ceased in the first decade of the 21st century (*Goldstein et al.* 2009), it has continued uninterrupted in Austria and Switzerland as well as both parts of Germany.

This continuation of fertility “postponement” is also illustrated in Figure 7, which looks at developments in cumulated fertility rates in two broad age groups, the “younger one” below 28 years, and the “older” one aged 28-50. The steady fertility decline in the “young” age group that started around 1970 has continued until now. The development in the “older” age group follows a more complex pathway, but three basic stages linked to general period fertility trends can be outlined (see also *Frejka* 2010), except in Eastern Germany which exhibited a specific trend. First, a rapid decline took place in the first half of the 1970s, associated with a fall in higher-order fertility rates. Second, a broad stabilisation or a slight rise occurred around 1980, which did not suffice to offset the ongoing fall in fertility at younger ages, resulting in some additional period fertility decline. Finally, a sustained fertility increase in the older age group in the 1990s and 2000s has eventually equalled or even slightly outpaced the ongoing decline in the younger age group, resulting in a

Fig. 6: Mean age of mother at first birth, Austria, Germany and Switzerland, 1952-2010



Notes: Official statistics for Switzerland prior to 1998 based on first birth within marriage; if non-marital births were included, the mean age at first birth would be slightly lower. Data for Western Germany until 2000 represent estimates based on survey data, which were used to redistribute births outside marriage into "true" birth order data.

Source: Austria: 1984-2010: *Geburtenbarometer* (2011); data for 1952-1983 were estimated by Anna Šťastná (RILSA, Prague) and Tomáš Sobotka on the basis of unpublished retrospective records collected in the 1981 Census and provided by Statistics Austria

Germany: *Eurostat* (2011) for 2009-10 and *Kreyenfeld et al.* (2010) for 2001-2008.

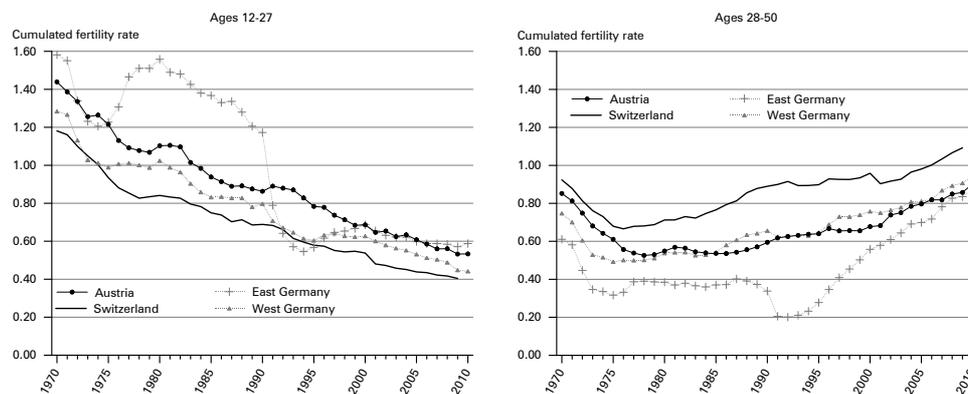
Eastern Germany: *Human Fertility Database* (2011) for the periods 1954-88 and *Luy/Pötzsch* (2010) for 1995-2000 (based on the official vital statistics); *Kreyenfeld et al.* (2010) for the period 2001-2008.

Western Germany: *Birg et al.* (1990) and *Kreyenfeld* (2002) for the period until 1995; *Luy/Pötzsch* (2010) for the period 1996-2000 and for 2009; *Kreyenfeld et al.* (2010) for the period 2001-2008.

Switzerland: *Council of Europe* (2006) and own computations based on *Eurostat* (2010).

broad stabilisation of the period TFR in Austria and Western Germany, its slight rise in Switzerland and a fast increase in Eastern Germany.

Fig. 7: Cumulated period age-specific fertility rates in two broad age groups, 12-27 and 28-50, Austria, Germany and Switzerland, 1970-2009



Source: *Human Fertility Database* (2011); *Geburtenbarometer* (2010)

Analysing fertility change in two broad age groups gives a simplified picture of reality. Therefore, additional evidence of fertility transformations in selected age groups during the last four decades is provided in Table A2 in online Appendix 1 (in CPoS 36,2-3). These data show rapidly diminishing childbearing among young adults below age 25 and even more so among teenage women, once a target of social policy interventions in many countries. In the case of Switzerland, teenage women currently account for only 1 % of the total fertility rate, whereas in Western Germany and Austria their share is between 3 and 4 %, down from over 12 % in 1970. A mirror development is observed in the last 2-3 decades in fertility trends among the women that are nearing the final stage of their reproductive lives. Since 1990, fertility rates at ages above 35 doubled in Austria, Western Germany and Switzerland, and they have increased by a factor of 3.7 (admittedly, from a low initial level) in Eastern Germany.

The shift to a later timing of childbearing has an important implication for the conventional measures of period fertility, especially for the overused period TFR (*Sobotka/Lutz* 2011): as long as it is underway, it negatively affects observed period fertility rates because some of the births that would have taken place in a given year were “postponed” into the future. This distortion may have no effect on cohort fertility, however. As a result, completed cohort fertility rates often stay well above the corresponding period TFRs (Section 2.2, Fig. 4). Several approaches have been derived to estimate period fertility rates that are free of the influences of the changing age pattern of childbearing (the so-called “tempo effect”), among which the most frequent is a simple method derived by *Bongaarts* and *Feeney* (1998). Table 2 presents this indicator (adjusted period TFR, labelled TFR*) alongside the conventional period TFR and the estimated tempo effect derived as a difference between them in two broad time periods, 1980-89 and, more recent, 2000-07. A more detailed look at the annual trends in both the TFR and TFR* is provided in Figure A3

in online Appendix 1 (in CPoS 36,2-3). This analysis broadly confirms some of the conclusions derived from the conventional period TFR alone. With the exception of Eastern Germany, fertility levels in Austria, Germany and Switzerland have been stable since the 1980s, with small declines observed in Austria and Switzerland. In the early 2000s, tempo-adjusted TFRs in these three countries reached a level of around 1.6. In Austria and Switzerland, the levels of tempo-adjusted TFR* converge to the projected completed fertility in the mid-1970s cohorts (Table 1), lending additional support to the notion of a stabilisation in fertility levels. The negative tempo effect in the conventional TFR in the early 21st century was estimated at very similar levels of -0.24 (Switzerland) to -0.30 (Eastern Germany). The persistence of childbearing postponement and the associated continuation of tempo effect also partly explain the absence of a larger upturn in period fertility rates in Austria, Western Germany and Switzerland as it occurred in many parts of Europe since the late 1990s (*Goldstein et al.* 2009; see also Section 2).

Tab. 2: Conventional (TFR) and tempo-adjusted (TFR*) period total fertility rates and estimated tempo effect in Austria, Germany and Switzerland (1980-89 and 2000-07)

	TFR		TFR*		Tempo effect	
	1980-89	2000-07	1980-89	2000-07	1980-89	2000-07
Austria	1.53	1.38	1.73	1.63	-0.20	-0.25
Germany-East	1.80	1.25	1.83	1.56	-0.03	-0.30
	(1980-87)		(1980-87)		(1980-87)	
Germany-West	1.37	1.36	1.59	1.61	-0.22	-0.24
Switzerland	1.54	1.42	1.73	1.68	-0.19	-0.26

Notes: Tempo-adjusted TFR* has been computed only for birth orders 1, 2 and 3, and combined with the ordinary TFR for birth orders 4+. Given that births at birth orders 4+ typically constitute a very small fraction of total births, this omission has almost no effect on the resulting values of the TFR*. German order-specific data are based on *Kreyenfeld et al.'s* (2010) computations based on perinatal births statistics. The adjusted TFR* for Switzerland in 1980-89 computed from the data for total birth orders as order-specific data are unavailable for that period.

Source: own computations based on *Human Fertility Database* (2011); *Luy/Pötzsch* (2010); *Kreyenfeld et al.* (2010).

5 Changing family patterns, living arrangements and fertility

A gradual retreat of marriage from the lives of men and women of reproductive ages has been a defining family trend across Europe since the 1970s (*Sobotka/Toulemon* 2008) and also a key feature of the “second demographic transition” (*Lesthaeghe* 1995). At younger ages, marriages have been increasingly postponed or foregone and replaced by cohabitation, non-residential partnerships (LAT), single living, and

a prolonged stay in parental home. For instance, in Western Germany cohabitation overtook marriage as a most frequent form of starting first partnership already in the late 1970s (Klein/Nauck 2005: Figure 13.2).

At the peak reproductive ages, the prevalence of marriage has been eroded by an increasing share of never-married and rising divorce rates. Consequently, more men and women stay unmarried throughout their thirties and forties and those who marry spend on average a shorter time in marriage. These trends are common to all countries across Europe, but have progressed with varying intensity (Sobotka/Toulemon 2008). This diversity, also typical of the three societies compared here, can be best illustrated with the shift towards a higher share of children born outside marriage. This indicator reached particularly low values in the mid-1960s, when it ranged between 4 % in Switzerland and 11 % in Austria (Fig. 8). Subsequently, this share increased steadily, especially in the 1990s and 2000s. In Eastern Germany, extramarital births became common already in the 1970s, in part due to policy pro-

Fig. 8: Share of births outside marriage (in percent), Austria, Germany and Switzerland, 1950-2010



Notes: Data for Eastern Germany exclude (East) Berlin since 1990; whereas the data for Western Germany include the whole territory of Berlin since 1990.

Source: Eurostat (2010); Council of Europe (2006); Statistisches Bundesamt (2011); Statistics Austria (2011).

visions supporting single mothers (*Konietzka/Kreyenfeld 2002; Salles 2006*). Since 2001, a majority of births in Eastern Germany takes place outside marriage. With 58 % of non-marital births in 2009, the region reaches one of the highest values in Europe. In Austria, the share of non-marital births surpassed 40 % in 2009, whereas Western Germany (27 %, including Berlin) and Switzerland (18 %) belong to the regions with a relatively low share of non-marital births (Fig. 8; in comparison, the share of non-marital births in the EU reached 37 %). These shares are yet higher for first births, reaching around 70 % in Eastern Germany (*Kreyenfeld/Bastin 2010*).

Although childbearing out of wedlock has been traditionally linked to single mothers, most of the spectacular growth in non-marital childbearing can be attributed to the rise of unmarried cohabitation. Recent data on the family situation in Austria and Germany around the time of first birth indicate that only one in ten or fewer first-time mothers can be classified as “truly” single mothers. A “transient category” is made up by women having a partner not living with them (5 % in Western Germany, 10 % in Eastern Germany), whereas a much higher share of women cohabit (Table 3). In Eastern Germany, unmarried cohabitation has become the most common living arrangement at the time of first birth, while in Austria, and even more so in Western Germany, marriage still dominates. Single motherhood in Austria and Germany is closely linked to younger age, larger settlement size, and, above all, low educational attainment (*Konietzka/Kreyenfeld 2005; Perelli-Harris et al. 2010a*). The results are less clear-cut for having a child in a cohabiting union, where a negative educational gradient exists in Austria and Eastern Germany, but not in Western Germany (*Konietzka/Kreyenfeld 2005: Table 4*).

Tab. 3: Partnership status of mothers at the time of birth of their first child (in %)

	Time frame	Married	Cohabiting	LAT	Single mother
Austria	Period 1995-2004	54	37	9*	
Eastern Germany	Cohorts 1971-73	36	43	10	11
Western Germany	Cohorts 1971-73	69	19	5	6

Note: LAT (living apart together) refers to a non-residential partnership, i.e., a relationship where each partner retains a separate household.

* Refers to both LAT and single mother.

Source: Austria: *Perelli-Harris et al. 2010b*; based on the Generations and Gender Survey 2008; Germany: *Kreyenfeld/Bastin 2010*; based on the pairfam 2008-2009 survey.

Many couples who cohabit when they have a first child eventually marry or dissolve their union. As a result, marriage and single motherhood gain importance, while the prevalence of cohabitation diminishes as the first child becomes older. Single parent families also increase in importance with children’s age due to rising cumulative likelihood of divorce of biological parents. In Switzerland, the share of

children living in single parent families in 2000 increased from 7 % at ages 0-4 to 16 % at ages 15-19 (Höpflinger 2010). Taking all households with dependent children below age 18 together, one-parent families are still more common than cohabiting unions in a majority of the EU countries (Sobotka/Toulemon 2008). Austria, Germany and Switzerland conform to this pattern: according to the 2007 EU-SILC survey, one-parent families were almost three times as common as families with cohabiting parents in Austria and almost twice as common in Germany (Iacovou/Skew 2010). Overall, one out of seven families with children in Austria and Germany were headed by a single parent (around the EU average), whereas more than three-quarters of families were composed of married couples with children (slightly above the EU average). Also earlier data from the 2000-2001 population census revealed that families with single mothers are considerably more common in the three compared countries than families with cohabiting partners (Table 4). Period life table estimates by Heuveline *et al.* (2003) based on data pertaining to the early 1990s show that cumulative share of children experiencing living with a single parent before reaching adulthood is surprisingly high in Austria (40 %) and Germany (39 %). A majority of these children were born to married or cohabiting couples and later experienced parental separation. As could be expected, a large majority of single-parent families are headed by women and only 15 % are headed by men in each of the three compared countries (OECD 2011a).

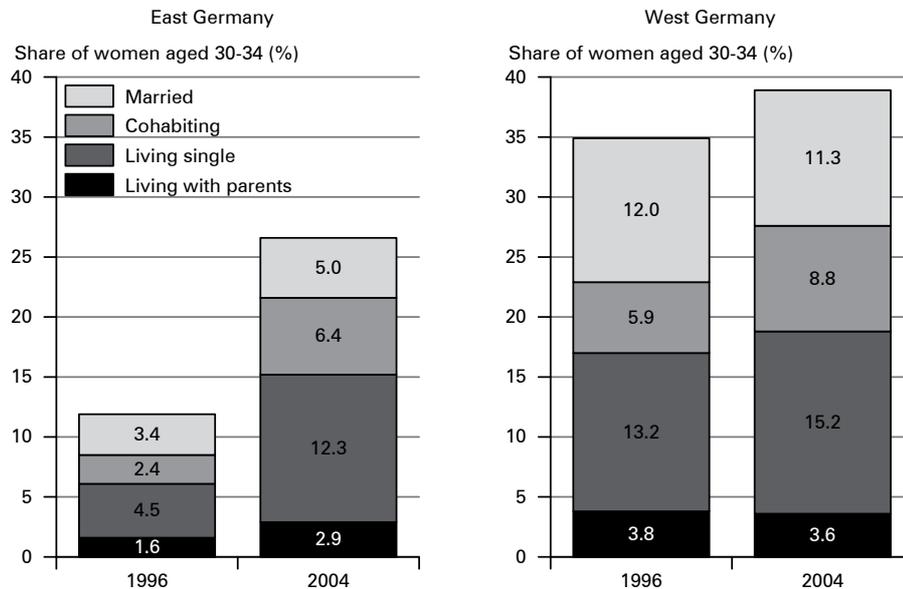
Tab. 4: Living arrangements in families with children (in %)

	Married couple	Cohabiting couple	Single parent	Without parent
Census 2000-2001; families of younger mothers aged 20-44				
Austria	73.4	8.4	18.2	x
Germany	79.0	6.9	14.2	x
Switzerland	83.6	5.2	11.2	x
EU-SILC survey 2007; all families with children below age 18				
Austria	78.2	5.5	15.0	1.3
Germany	76.1	7.4	14.3	2.2
EU-25	73.8	11.0	14.1	1.2

Source: Sobotka/Toulemon (2008: Table 6; 2000-2001 Census data based on Eurostat), Iacovou/Skew (2010: Table 4.2; 2007 EU-SILC data).

It is equally important to analyse trends in living arrangements of childless men and women. Especially in Germany, later entry into marriage or cohabitation and lower stability of partnerships imply a higher share of people living without a partner and fewer opportunities for family formation (Eckhard 2006). Dorbritz (2003, 2008) pursues a view that living arrangements of adults in their 30s have become increasingly “polarised” between those living in family forms, mostly following a traditional pattern of marriage and childbearing, and those living outside a family,

Fig. 9: Percentage of women aged 30-34 remaining childless by living arrangements, Eastern and Western Germany, 1996 and 2004



Source: *Dorbritz/Ruckdeschel* (2009: Table 10); based on *Mikrozensus* surveys.

often as singles. The non-family living arrangements are especially typical of highly educated and qualified women (*Dorbritz* 2003). Figure 9 shows that the number of women aged 30-34 in childless living arrangements has risen particularly sharply in Eastern Germany, and was closely linked to the rapid expansion of single living and, to a smaller degree, of unmarried cohabitation. Altogether, in 2004, 39 % of West German women and 27 % of East German women of that age lived without a child; of whom about one half (slightly more in Eastern Germany) lived as singles or with parents.⁷

Men stay in the parental home longer and at any age more frequently than women, especially in Austria, where as many as 20 % of men aged 30-34 and 12 % of men aged 35-39 still lived with their parents in 2008 (*Geserick* 2011, based on GGS survey).⁸ In Eastern Germany, the partnership “market” for men and their chances to

⁷ An international comparison based on the Population Policy and Acceptance Survey conducted around 2001 showed that childless German women and men aged 20-39 stood out for their unusually high preference for childless and partnerless living arrangements, including single living, non-coresidential partnerships and flat sharing with friends (*Sobotka/Testa* 2008: 193).

⁸ This share is far above the share of German men living with parents, which stood around 6 % at age 30-39. However, not all Austrian men living in the parental home are childless and partnerless, as multigenerational households with children are rather common in Austria (*Iacovou/Skew* 2010, Table 4.2), especially in rural areas.

start a family have been negatively affected by a high level of emigration of younger and better-educated women, causing a fall in the number of women per 100 men around age 30 from 95 in 1991 to 89 in 2004 and this fall was most pronounced in structurally weak rural areas (*Berlin Institut* 2007). This “shortage of women” especially affects men with lowest qualifications and unemployed (*Lengerer* 2011).

6 Educational differentials in family size and childlessness

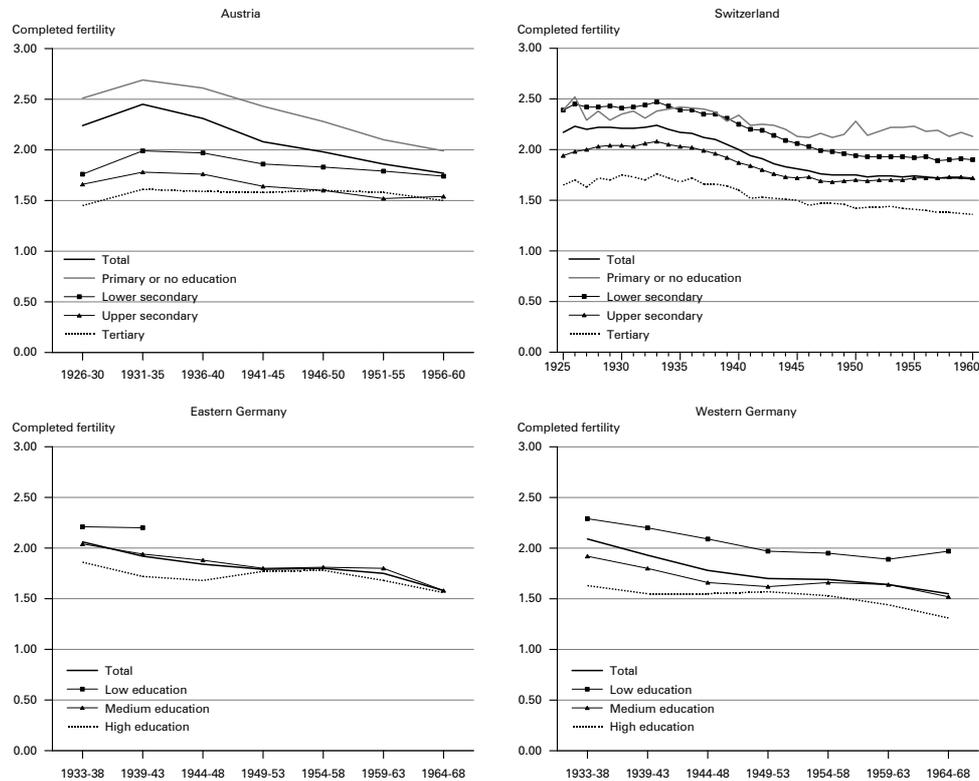
Among women, higher education has been associated with lower fertility throughout the whole of the 20th century (*Skirbekk* 2008). The negative educational gradient in fertility is pronounced in countries institutionally supporting long withdrawal of mothers from the labour market, where highly educated women face difficulties combining their work and family life, including Austria, Germany and Switzerland (*Liefbroer/Merz* 2011). In these countries, low fertility and elevated childlessness among university-educated women have been frequently debated in social science research and by the media. They also resonate in populist texts that paint a picture of a progressive decline of a society that is increasingly dominated by lower-educated population with low levels of skills (e.g., *Sarrazin* 2010: Chapter 8).⁹

How large are educational differentials in fertility? Do they decline over time, with generally declining family size? Figure 10, based on Census and Microcensus data gives a long-term picture of completed fertility among women born in the 1920s-1960s in the three compared countries. This comparison is hindered by different categorisations of achieved education. Nevertheless, a number of well-supported observations can be made:

- Women with a high degree of education have had a low family size throughout the whole observation period. For instance, tertiary-educated Austrian, West German and Swiss women born in the mid-1930s had 1.6-1.7 children on average. This level has declined to 1.4-1.5 in the cohorts born around 1960, with the exception of Eastern Germany where it stood at 1.7.
- The educational gradient in fertility remained stable (Western Germany, Switzerland) or declined (Austria, Eastern Germany) among the younger cohorts.
- The rising level of female education constitutes an important factor in the observed decline in the mean family size.
- The diminishing group of women with elementary or no education has achieved higher fertility close to the replacement level, around 2 children per woman, in the late 1950s and the early 1960s cohorts in Austria and Switzerland.

⁹ *Sarrazin* (2010: Table 8.7) presents a projection scenario, keeping estimated fertility differentials in Germany by level of education constant and assuming that children will achieve identical education to their parents. In this scenario, the number of children born to parents with a high level of education falls by half from 22.5 % to 11.1 % in the course of five generations, while the share of births to parents with low education surges from 14.5 % to 34.1 %. Such projections are based on obscure premises, but nevertheless achieve the desired scare effect.

Fig. 10: Completed fertility by level of education in Austria, Germany and Switzerland, women born in the 1920s-1960s



Notes: Computations for Switzerland exclude women with unknown number of children. Definitions of education categories are available in online Appendix 3 (in CPoS 36,2-3).

Source: Austria: Population Census 2001 (*Statistics Austria* 2005); Switzerland: Population Census 2000 (based on data and computations kindly provided by Marion Burkimsher). Germany: 2008 Microcensus survey (*Statistisches Bundesamt* 2009).

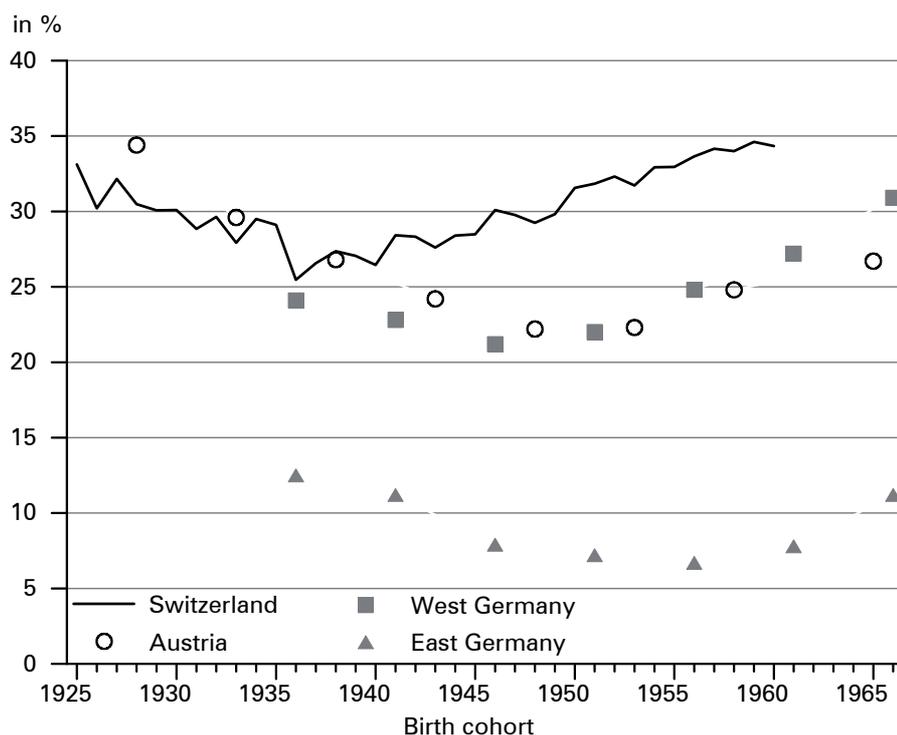
- In contrast to West German women, East German women born up until the 1960s displayed very small fertility differentiation by level of education. This finding is usually explained by institutional factors supporting a rapid return to employment after childbirth among highly qualified women in the former GDR, especially the wide coverage of public childcare facilities (*Kreyenfeld* 2004; see also concluding section).

What is the role of childlessness in explaining the observed fertility gradient by level of education? High childlessness among professionally active women with advanced educational attainment motivated numerous studies, especially in Germany (*Dorbritz* 2003; *Kemkes-Grottenthaler* 2003), but also in Austria (*Buber et al.* 2011). Due to the lack of reliable data, childlessness among German women with a high educational degree has often been overestimated in the past, with some estimates

suggesting that more than 40 % of them will remain permanently childless. More recently, the 2008 Microcensus survey revealed that these estimates have been exaggerated.

Figure 11 combines available data on permanent childlessness among tertiary-educated women in the three analysed countries. The long-term trend shows a U-turn, with high childlessness among the small and select group of women with a tertiary degree born around 1930 (surpassing 30 % in Austria and Switzerland), declining among the cohorts born in the 1930s and 1940s (except in Switzerland), and then rising in the subsequent cohorts. Among the younger cohorts of women past the reproductive age, Switzerland has the highest share of childless, with more than one out of three tertiary educated women born in the late 1950s remaining childless as compared with one out of five in the general population. In Western Germany, the share is also high, surpassing 30 % among women with a high educational degree

Fig. 11: Childlessness among tertiary-educated women born in the 1920s-1960s; Austria, Germany and Switzerland



Notes: Computations for Switzerland exclude women with unknown number of children. Definitions of education categories are available in online Appendix 3 (in CPoS 36,2-3).

Source: Austria: Population Census 2001 (*Statistics Austria* 2005); Switzerland: Population Census 2000 (based on data and computations kindly provided by Marion Burkimsher); Germany: 2008 Microcensus survey (*Statistisches Bundesamt* 2009).

born in the mid-1960s, while in Austria it exceeded 25 %. As in many other demographic aspects, the West German level contrasts sharply with Eastern Germany, where childlessness was low (11 %) in the mid-1960s cohorts; this share is likely to increase rapidly among the younger cohorts growing up in the post-unification conditions marked by elevated economic uncertainty, especially in the 1990s.

In each of the analysed countries with the exception of Eastern Germany, childlessness is strongly differentiated by education, similar to the overall educational gradient in fertility (online Appendix 1, Fig. A4, in CPoS 36,2-3). Women with primary or lower secondary education display the lowest rates of permanent childlessness at about 15 % in the late 1950s and the early 1960s cohorts. This indicates that a large part of completed fertility differentials may be attributable to childlessness. One way to analyse this is to compare the family size of mothers only. In each country, educational differentials in the family size of mothers are indeed substantially lower than among all women. The mean family size of mothers is closely clustered around 2 children per mother for all educational groups except for the mothers with the lowest educational attainment who have a higher family size (online Appendix 1, Fig. A5, in CPoS 36,2-3).

These general findings on educational gradient in fertility should be interpreted with caution. Looking at a few education categories only hides much larger differences within each category. In particular, childlessness and family size are strongly differentiated by field of education (*Hoem et al.* 2006; *van Bavel* 2010; *Neyer/Hoem* 2008 for Austria). In addition, the observed gradient in fertility may be partly explained by “reverse causation” – some women are not able to complete their studies (and attain higher level of education) due to becoming pregnant and giving birth to a child during their studies. A study on Norway by *Cohen et al.* (2011) suggested that this effect may be actually larger than the negative effect of education on family size.

However, these considerations do not make the presented findings on the negative association between educational attainment and fertility among women less important. Data on fertility ideals, desires and intentions suggest that the observed gradient is not reflected in fertility desires and intentions: survey data show only a weak negative association between education and intended family size (e.g., *Sobotka* 2009 and *Neuwirth et al.* 2010 for Austria). In the case of Germany, *Heiland et al.* (2005) even show that the *DJI Family Surveys* conducted in 1988 and 1994 indicated a positive educational gradient in intended family size.¹⁰

¹⁰ This finding might be explained by a hypothetical nature of the intentions questions analysed: “If it was entirely up to you, how many children in total would you like to have or liked to have had?” A more realistic question on actual reproductive preferences might have yielded a neutral or slightly negative gradient, in line with the data for Austria.

7 Fertility of immigrant women: A gradual convergence to the level of “native” women

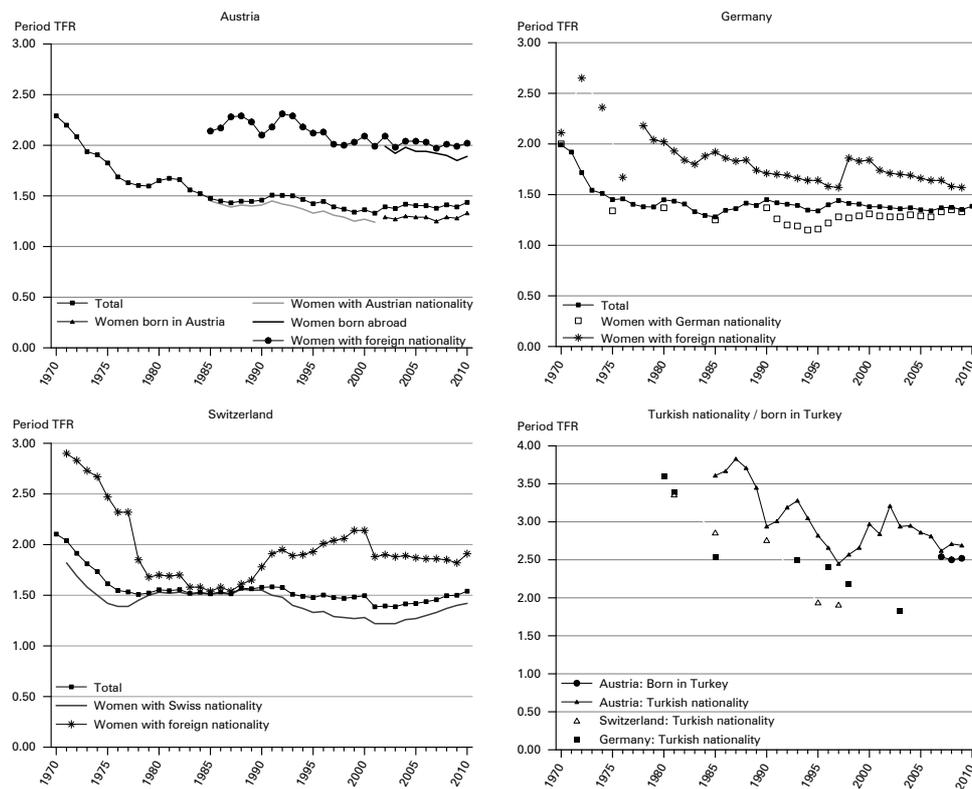
In Northern, Southern and Western Europe, migrant women have on average higher fertility rates than the women born in the country (*Sobotka 2008*). At the same time, this difference is not massive as occasionally thought among the broader public and most groups of migrants actually record below-replacement fertility rates. Also the recent increase in period fertility rates in many countries of Western Europe between 2000 and 2008 was at times perceived as a consequence of high immigration rates of more fertile populations. However, for most countries this perception has not been supported by empirical findings (*Goldstein et al. 2009*).

This section combines diverse data sets to track changes in fertility rates of immigrant and foreign women as well as their share on total births in the period 1970-2010. In addition, I also studied the net impact of the higher fertility rates of foreign women on the national TFR level as well as trends in the share of births to foreign mothers, and the TFR levels among the largest higher-fertility minority, i.e., among the group of Turkish women.

Although theoretically simple, measuring migrants' fertility is complicated due to different concepts of migration and citizenship, which are also reflected in the vital as well as population statistics (*Sobotka 2008*). The simplest definition of an immigrant as a person born abroad is not always followed in the official statistics: in the three countries studied here, only one, Austria, publishes data allowing computation of annual fertility rates by country of birth. In contrast, each of the three countries publishes fertility data by citizenship (nationality), which is, however, difficult to compare due to vast differences in the citizenship status of recent as well as long-settled migrants. For instance, Austria has granted citizenship status in the past to many migrants with long-term stay in the country, while Switzerland makes obtaining citizenship so difficult that many residents born in Switzerland remain foreign citizens because their parents or grandparents migrated to the country. Hence, the statistics presented here, based mostly on the nationality concept, should be seen as a crude and approximate measure of migrants' fertility rates. Finally, the available period data, especially the period TFR, are subject to measurement problems and interpretations, including tempo effects or the strong link between migrants' duration of stay in the country and fertility (*Sobotka/Lutz 2010; Toulemon 2004*).

As in other rich societies, migrant women in Austria, Germany and Switzerland have on average higher fertility rates than “native” women. This difference is not massive, however, and fertility rates among foreign women can hardly be considered high. The period TFR of foreign women dipped below the threshold of two children per woman as early as in the late 1970s in Switzerland (with the exception of a brief period in the 1990s), in the 1990s in Germany and recently also in Austria (Fig. 12). In Germany, a fall in the period TFR among foreign women to the level below 1.6 led to a rapid narrowing in fertility differential between foreign women and German citizens from 0.8 in the early 1990s to 0.24 in 2008-09 (Fig. A6 in online Appendix 1, in CPoS 36,2-3; see also *Schmid/Kohls 2009*). A cohort analysis based on 2008 Microcensus data showed that migrant women in Germany born in the

Fig. 12: Period fertility rates in Austria, Germany and Switzerland by nationality and migration status for all women with foreign nationality or foreign country of birth and for Turkish women (1970-2010)



Notes: Data for Germany in the period up to 1990 refer to Western Germany and West Berlin. Note that TFR data among foreign women in Switzerland fluctuate considerably; these fluctuations have been partly caused by changes in the births statistics for foreigners, especially inclusion or exclusion of data for asylum seekers.

Source: Austria: *Geburtenbarometer* (2011); *Zeman et al.* (2011); *Kytir* (2006), and data provided by Statistics Austria. Germany: *Statistisches Bundesamt* (2011); *Schmid/Kohls* (2009); *Mammey/Schwarz* (2002: 227, Table 6.3). Switzerland: *SFSO* (2011) and *Wanner* (2002).

1960s reached sub-replacement fertility around 1.9 children per woman (*Dorbritz* 2011). A more gradual convergence of the fertility level took place in Austria and Switzerland; in the latter, partly due to a gradual increase in fertility among the “native” women after 2003. The absolute fertility differential remains largest in Austria and amounted to 0.7 in 2009 when measured with nationality status and to 0.57 when measured with migration (country of birth) status (Table 5, online Appendix 1, Fig. A6, in CPoS 36,2-3). Although narrowing, this fertility differential still has a non-negligible impact on the period TFR in Austria and Switzerland, where it “pushed” the period TFR upwards by about 0.10-0.11 in absolute terms in 2009; this positive

effect on the period TFR has become much smaller (0.03) in Germany (Fig. A6 in online Appendix 1, in CPoS 36,2-3).

Detailed analyses have repeatedly shown vast differences in fertility of migrants by country of origin, level of education, religious affiliation, or ethnicity (for Germany, see *Schmid/Kohls* 2009; *Milewski* 2010; *Dorbritz* 2011). In the analysed countries, Turkish women constitute the largest migrant group with relatively high fertility. However, the available data show a rapid fall in fertility among women with Turkish citizenship in Germany and Switzerland, bringing their period TFR level down from 3.4 in 1981 to levels below 2 around 2000. Similarly dramatic declines have been depicted in cohort fertility data for women born in Turkey (e.g., *Kohls et al.* 2010 for the post-1940 cohorts living in Germany). Only in Austria, Turkish women still retain relatively high fertility with the period TFR for Turkish migrants hovering around 2.5 (Fig. 12, Table 5, *Geburtenbarometer* 2011).

When migrant or foreign women are disregarded, Austrian, German and Swiss women show remarkably similar fertility levels and trends with the period TFR at 1.3 for “native” Austrian and German women and 1.4 for “native” Swiss women in 2009-10 (online Appendix 1, Fig. A6, in CPoS 36,2-3). These values are slightly higher than the minima reached in the early 2000s in Austria and Switzerland (1.24 and 1.22, respectively) and already in 1994 in Germany (1.15).

A combination of higher fertility of migrants, their relatively young age structure with many women in the prime reproductive ages, as well as their increasing share in the population, implies that immigrants have a high and often increasing share in the total number of births. In Austria, this share tripled from 9 % in the mid-1980s

Tab. 5: Period total fertility rate among women with foreign nationality and women born abroad, Austria, Germany and Switzerland, 1985 and 2009

Year Type of data	Austria		Switzerland		Germany	
	1985 Nationality	2009 Nationality	2009 Country of birth	1985 Nationality	2009 Nationality	2009 Nationality
Share of births by foreign mothers (percent)	6.0	21.6 (2007)	29.3	15.6	36.3	16.8
TFR	1.47	1.39	1.39	1.52	1.50	1.35
TFR: native women	1.45	1.29	1.28	1.51	1.40	1.33
TFR: foreign women	2.14	1.99	1.85	1.54	1.82	1.57
TFR: Turkish women	3.70 (84-89)	2.69	2.52	2.86		1.83 (2002-4)
TFR: abs. difference foreign-native	0.69	0.70	0.57	0.03	0.42	0.24
TFR: “excess” fertility of foreigners (percent)	48	54	45	2	30	18
TFR: net impact of fertility of foreign women	0.02	0.10	0.11	0.00	0.10	0.03

Source: Austria: *Geburtenbarometer* (2011); *Zeman et al.* (2011); *Kytir* (2006), and data provided by Statistics Austria; Germany: *Statistisches Bundesamt* (2011); *Schmid/Kohls* (2009); *Mammey/Schwarz* (2002: 227, Table 6.3). Switzerland: *SFSO* (2011) and *Wanner* (2002).

to a high level of 29 % in 2010 (Fig. A6 in online Appendix 1, in CPoS 36,2-3). In Switzerland, where the data pertain to foreign rather than immigrant women, their share of total births surged from 15 % in the mid-1980s to 37 % in 2010. In contrast, in Germany the share of foreign women on the absolute number of births has been relatively stable at around 17 % since the mid-1990s.

8 Discussion and conclusions

Austria, Germany and Switzerland: A shared fertility pattern?

The three compared countries share a number of common features in their fertility patterns and broader family trends. They are characterised by comparatively low, but also relatively stable, fertility rates since the late 1970s which contrast with higher and less stable fertility rates in Northern Europe and in most parts of Western Europe (see also online Appendix 2, in CPoS 36,2-3). It appears that each of these three countries has already reached its lowest period fertility values. Period total fertility rates have rebounded somewhat from the time of reaching their minima between 1985 (Western Germany) and 2001 (Austria and Switzerland). This rebound was only slight in Western Germany and Austria; modest in Switzerland and pronounced (although from extremely low levels) in Eastern Germany. This trend was uninterrupted by the recent economic recession, when fertility rates remained stable or increased slightly in 2009-2010. A continuing tempo distortion in the order of 0.2-0.3 in absolute values suggests that in the future an additional moderate rise in the period TFR is likely to lift period fertility rates yet higher above their minima reached in the past. This likely trend notwithstanding, all three countries have reached low completed fertility rates and an elevated childlessness around 20 % or higher (except in Eastern Germany), which is above the level of most European countries (online Appendix 2, in CPoS 36,2-3). Austria, Germany and Switzerland also share a relatively pronounced negative correlation between the level of education and fertility rates, which is closely linked to high childlessness rates among women with higher degrees of education, especially among those with tertiary education. Finally, immigrant women have a relatively high share of the number of births and their on average higher fertility level has a slightly positive effect on total fertility rates in each of the three countries studied.

Besides these similarities, two main differentiating factors can be pointed out. The first concerns an internal differentiation of fertility in Germany: two decades after German unification, many contrasts in fertility patterns have persisted between the East and the West of the country (see below). The second is a considerable differentiation of family-related behaviours, living arrangements and non-marital childbearing in the compared countries which continues despite shared family trends over time.

East vs. West German fertility: Convergence or persistent contrasts?

At face value, fertility rates in East and West Germany have broadly converged. Thanks to a vigorous recovery of period fertility in East Germany since the mid-1990s, the period TFR has surpassed that of Western Germany since 2008 (see Section 2). Cohort fertility rates are also converging as the mean family size in Eastern Germany is gradually declining towards the low West German values. In addition, tempo-adjusted period total fertility converged between these two regions by the mid-2000s (Section 4; *Goldstein/Kreyenfeld* 2011). This development seemingly confirms initial expectations that political and institutional unification of the two “Germanies” should eventually also bring about similar fertility patterns.

However, below the surface a surprising number of differences remain, often rooted in the pre-unification contrasts in family patterns between the former GDR and FRG (*Kreyenfeld* 2004; *Becker et al.* 2010; *Goldstein et al.* 2010). Western Germany has high childlessness, but also a higher share of larger families with three or more children. In contrast, East German women are characterised by low childlessness combined with an increasing shift towards a one-child family model. The educational gradient in fertility is considerably smaller in the East, where university educated women display high first birth rates after completing education (*Kreyenfeld* 2010). Marriage has largely become irrelevant for reproduction in Eastern Germany (*Konietzka/Kreyenfeld* 2002) and East German women do not show a strong preference for marriage as a “best” living arrangement for having children (*Mayer/Schulze* 2009). In Western Germany marriage still remains by far the most common setting for childbearing.

Many women leave the labour force after becoming mothers in Western Germany, whereas being a “housewife” is much less common in Eastern Germany (*Kreyenfeld* 2010; *Goldstein et al.* 2010). About one-half of East German mothers retain full-time labour force participation (but only one-fifth in Western Germany) and public childcare for children below age three is widely available, accepted and used in the East (*Goldstein/Kreyenfeld* 2011; *Statistisches Bundesamt* 2010; *Goldstein et al.* 2010). In contrast, the prevailing societal norms and expectation that mothers will provide exclusive childcare when their children are small are strongly entrenched in Western Germany (*Rossier et al.* 2011). As a result, most West German women plan a long interruption of their work career after the birth of their first child, irrespective of their attitudes. In addition, surveys show that East German women are considerably more secular, but also more family oriented when childless as compared to their West German counterparts.

Immigrants have a negligible influence on fertility in Eastern Germany, especially due to their small share of the population. In contrast, “internal” emigration to Western Germany has a direct influence on the number of births as well as partnership and reproductive choices of East German men as young women emigrate from the East more frequently than young men do.

In summary, the continuing fertility contrasts between Eastern and Western Germany – characterised by a combination of elevated first birth rates and a slower transition to the second birth in Eastern Germany (*Becker et al.* 2010) – are closely

linked to persistent differences in family-related values, employment, public child-care acceptance and availability as well as partnership behaviour (Mayer/Schulze 2009; Becker *et al.* 2010). Goldstein and Kreyenfeld (2011: 458) point out that “West Germans tend to be highly concerned about the adverse effects of maternal employment on the well-being of children – exemplified by the strong disapproval of the so-called Rabenmutter (Raven Mother) who neglects her infant – while East Germans generally do not share this worry.” In East Germany, high unemployment fuels economic uncertainty and prevents many younger people from achieving stable full-time employment. While a secure job position is usually seen as a precondition for family formation in Western Germany, East German women and couples are often willing to “live with uncertainty” and pursue childbearing irrespective of their uncertain employment prospects (qualitative research by Bernardi *et al.* 2008). Finally, turning attention to men, Mayer/Schulze (2009: 26) emphasise that in the eyes of women, West German men are “difficult partners” who are reluctant to commit themselves to marriage and childbearing.

Institutional underpinning of low fertility in Austria, Germany and Switzerland

Low fertility in Austria, Germany and Switzerland is often seen as an outcome of specific institutional factors that sustain the pattern of low fertility. The three countries share a relatively “traditional” orientation of labour market and family policies (Esping-Andersen 1999; Prskawetz *et al.* 2008; Rosenfeld *et al.* 2004; Spieß/Wrohlich 2008), supporting gender roles division in childrearing tasks and a long withdrawal of mothers from the labour market, facilitated by both extended parental leave period (except in Switzerland) and a limited availability of childcare for children below age 3 (except in Eastern Germany; recently, childcare availability has also improved considerably in Western Germany). In Germany, joint taxation of married couples is an additional factor encouraging traditional gender division of labour and family care, impeding women’s full-time labour force participation and, potentially, also affecting their fertility decisions (Apps/Rees 2004; Esping-Andersen 2009). Perceived difficulties of combining work and family life are often cited as important reasons for low fertility and high childlessness among the tertiary educated women (see Section 6). These factors should not be seen entirely as constraints imposed from above, since survey data show a continuing negative perception of working mothers and institutional childcare during the first three years of the child’s life in Austria, Germany and Switzerland (Liefbroer/Merz 2010); not so in Eastern Germany (Mayer/Schulze 2009; Goldstein/Kreyenfeld 2011; see also above).

Several studies point out that women and men in Austria and Germany have low fertility ideals and intentions, which are both below the replacement threshold and below the levels reported in other European countries (Goldstein *et al.* 2003; Sobotka/Testa 2008; Sobotka 2009; see also Philipov and Bernardi 2011, in CPoS 36,2-3). Thus, low fertility in the analysed countries can also partly be seen as an outcome of a wide acceptance of childlessness and non-family living arrangements (see also Section 5) as well as generally low family size preferences. It is likely, however, that

institutional constraints and low family size preferences are intertwined and that the former influences the latter.

Concluding comments

By and large, Austria, Germany and Switzerland share a common pattern of low fertility which has been remarkably stable during the last three decades. Also completed cohort fertility is expected to stabilise in the early 1970s cohorts, following its long-term decline, and may even slightly rise, especially in Western Germany (Section 3.2; *Goldstein/Kreyenfeld* 2011). Fertility rates in these three countries have often risen and fallen in a similar fashion and have often been underpinned by similar institutional factors. A curious feature and an attractive subject of social science research is the peculiar position of Eastern Germany, which often shows contrasting patterns in family-related behaviours to those observed in Austria, Western Germany and Switzerland. This overview gives only limited support to the idea of reproductive polarisation, which has two distinct dimensions: first, it can be seen as a sharper division in the population between living arrangements and life course trajectories that are not compatible with reproduction and those which involve family life with children (*Huinink* 2002; *Dorbritz* 2003). Second, the polarisation can be seen as a process where fertility decisions are increasingly differentiated after the birth of the first child, with one-child families rising in prominence (*Huinink* 1989). Although childlessness has been on the rise and one-child families became very common in Eastern Germany, the three compared countries still display a clear preference for a two-child family model, which also remains most common.

It is unlikely that fertility rates in Austria, Germany and Switzerland will show rapid changes or reversals. However, three factors suggest that a fertility increase is more likely than a fertility decline in the next two decades. First, the long-term shift towards a later age at childbearing is likely to diminish and eventually come to an end. When that happens, the negative *tempo effect* on the period total fertility rate will diminish, potentially pushing this indicator to the level around 1.6. In addition, these three countries have been affected relatively little by the recent economic recession and have seen a modest rebound of their economies, with unemployment in Austria falling to the lowest level in the EU in 2011 and unemployment in Germany reaching its lowest value since 1991. As positive economic conditions are conducive to childbearing (*Adsera* 2005; *Örsal/Goldstein* 2010; *Sobotka et al.* 2011), the current economic and labour market situation may eventually lead to higher fertility. Third, policies once favouring the traditional “male breadwinner” model of work and family are gradually changing, accommodating more choice and giving better support to working mothers by increasing early childcare availability and making parental leave more flexible and better paid for those who opt for its shorter duration (e.g., *Spieß/Wrohlich* 2008; *Prskawetz et al.* 2008; *OECD* 2011b). This shift closer to the “Nordic” policy model may also lead to a slight rise in fertility, one notch closer to the values observed in Northern Europe.

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