

Austria: Stable and Low Fertility

By I. Buber, T. Sobotka, A. Prskawetz, H. Engelhardt and R. Gisser

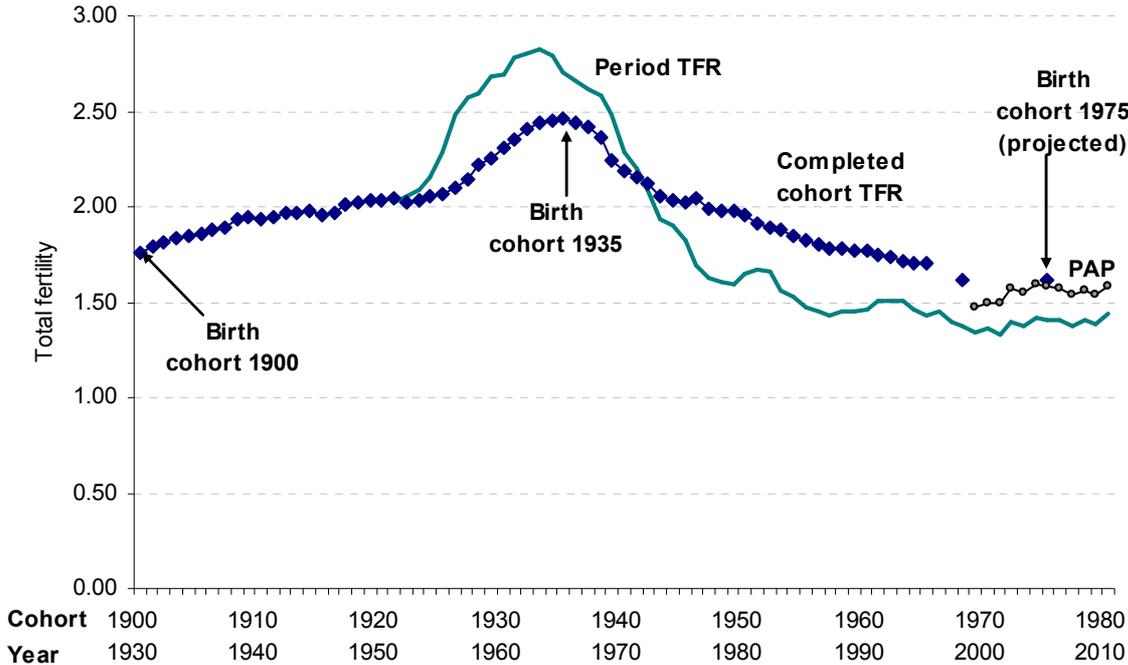
Austria, a central European country with a population of 8.4 million, has a long history of sub-replacement fertility. Completed fertility had dipped below two children per woman already during the (first) demographic transition, and rose temporarily above this level among the 1917-1946 cohorts. Following the peak of the baby boom in the early 1960s, a substantial fall in fertility continued until the mid-1980s. Since then Austria has recorded low and relatively stable period fertility, with the period total fertility rate (TFR) hovering in the range of 1.3 to 1.5. Yet considerably lower fertility levels had been typical for the city of Vienna until the 1990s. A long-standing trend towards delayed childbearing has been in part responsible for the persistence of such low fertility levels. Also the desired family size has reached relatively low levels. Minor swings in period fertility were associated with changes in family policies, in particular parental-leave arrangements.

Period and cohort fertility trends

The long-term trends in Austrian fertility have evolved in parallel with the trends in western and northern European countries. Three major shifts affected fertility developments during the 20th century. First, a steep fall in fertility rates took place after World War I, leading to sub-replacement fertility levels during the economic crisis of the 1930s (Frejka and Sardon 2004). As a result, women born during the first quarter of the 20th century achieved below replacement fertility as well. Second, a marked rise in fertility was recorded during the period of economic and social recovery after World War II and culminated in the early 1960s, when the period TFR reached the level of 2.8. Subsequently, a substantial fall in fertility took place between the mid-1960s and the mid-1980s. Figure 1 shows the completed cohort fertility among women born between 1900 and 1966 and period fertility rates in the period 1951-2010. For the more recent period the graph also displays a period fertility indicator based on parity progression ratios, termed the period average parity (PAP). This fertility index is based on a set of age-specific childbearing probabilities for first births and duration-specific childbearing probabilities for second and higher-order births. This approach reflects properly

the sequential nature of childbearing.¹ Whereas the TFR has hovered in the range of 1.3-1.5 since the mid-1980s in the last two decades, the PAP, which is less affected by tempo effects, has typically reached the levels above 1.5. Completed fertility has gradually declined among women born after 1935, dropping below 1.7 among women born after 1965; it is projected to stabilise at above 1.6 among the cohorts born after 1970 (Sobotka et al. 2011, Prioux et al. 2010).

Figure 1: Period (1951-2010) and cohort (1900-1975) fertility indicators, Austria



Sources: Census 2001 (Statistics Austria 2005c) for birth cohorts 1941-1966 and census 1991 (Statistics Austria 1996) for birth cohorts 1900-1940. VID (2010) for the cohort 1968; Sobotka et al. (2011) and Prioux et al. (2010: 401, Table A7) for the projected completed fertility among the women born in 1975. Period data and cohort fertility realised in 2001-10 are based on authors' computations from the database of births provided by Statistics Austria.

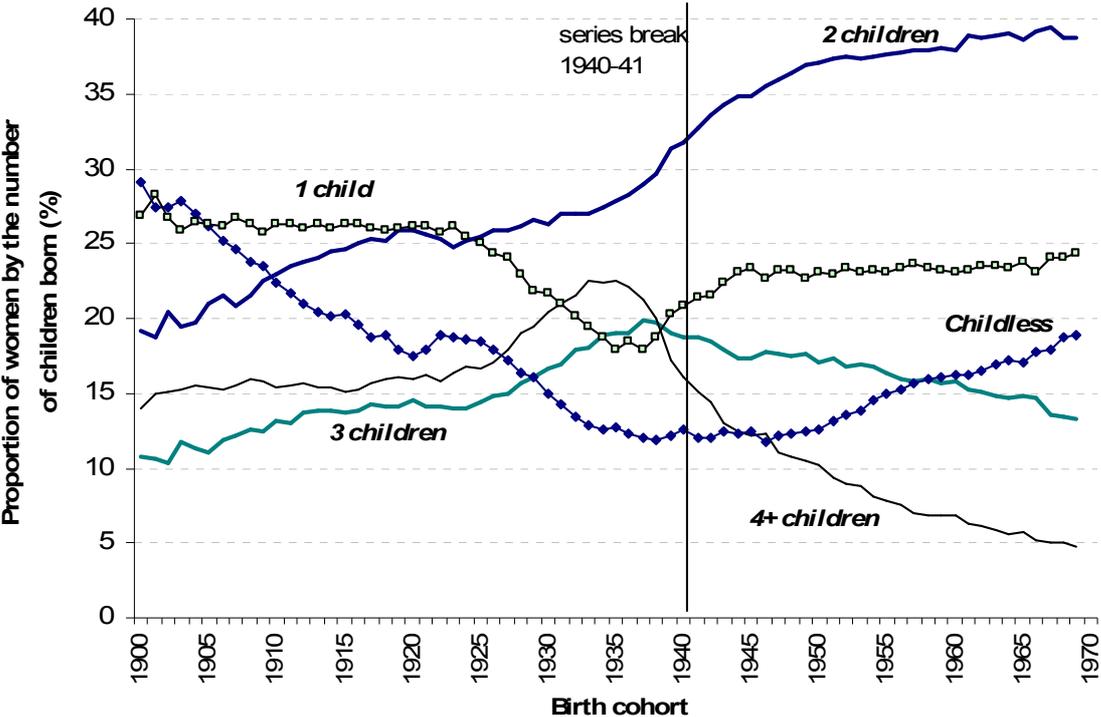
Completed fertility and parity distribution among women born since 1900

Women born in 1900, affected in part by the economic crisis of the 1930s, achieved low completed fertility of 1.75 through a combination of high childlessness and small average family size. Given the high infant and child mortality of the period, this fertility rate was deep below the population replacement level. According to the 1991 census, childlessness among Austrian women born in the early 20th century reached particularly high levels, surpassing 20 percent for women born up to 1915 and even getting beyond 29 percent among women born in 1900. This is well above the levels of childlessness recorded in early 20th-century cohorts in neighbouring countries (see also Sobotka 2011). The post-war baby boom led to a remarkable rise in completed fertility, surging to 2.46 among women born in 1935. This rise resulted in a marked shift in the final parity distribution. Childlessness decreased to 12 percent among women born in the period 1936-49, and families with only one child became

¹ The construction and the use of the PAP index is further described in Sobotka et al. 2005 and Zeman et al. 2011; see also Geburtenbarometer 2011.

relatively uncommon. In parallel, larger families became dominant, with more than 40 percent of all women born in 1932-38 having three or more children. After that, the end of the baby boom once more brought a rapid decline in the share of larger families and a parallel rise of childlessness, which has approached 20 percent among women born in 1970. At the same time, the share of two-child families also increased, continuing the trend that started already among the early 20th century cohorts. The two-child family became by far the most common family size—regarding ideals, intentions and also actual numbers.

Figure 2: Cohort parity distribution, Austrian women born 1900-1969



Sources: Census 2001 (Statistics Austria 2005c) for birth cohorts 1941-1969 and census 1991 (Statistics Austria 1996) for birth cohorts 1900-1940. Cohort fertility taking place in 2001-2010 was computed from the period fertility data based on vital statistics published by Statistics Austria and Eurostat.

Socioeconomic differences in completed fertility and parity distribution

The overall picture of cohort parity distribution hides a number of pronounced socio-economic differentials. Within Austria, Vienna traditionally stood out for its low fertility and high childlessness levels. One-quarter of all women born between 1955 and 1960 residing in Vienna in 2001 were childless, as compared to 16 percent in the whole of Austria. Furthermore, their completed fertility reached a very low level of 1.43.

Among the foreign-born women, the growing Turkish minority stands out for its high fertility level (3.07 children per woman in the 1955-60 cohorts), very low level of childlessness and high prevalence of larger families. Two-thirds of women born in Turkey in the late 1950s have had three or more children. This indicates a very limited popularity of the two-child family model among the Turkish population born until the 1950s. Women born in former Yugoslavia also have relatively low childlessness levels, but combined with a pronounced orientation towards a two-child family, with 46 percent having two children.

Table 1: Selected characteristics of completed fertility and parity distribution among women born 1955-1960 by place of residence, country of birth, religious affiliation and highest educational attainment

Place of residence	Childless (%)	1 child (%)	2 children (%)	3+ children (%)	PPR 2-3	Mean number of children		Share in the total population (%)
						per woman	per mother	
All resident women	16.1	23.4	37.9	22.6	0.373	1.77	2.11	100
Vienna	25.3	28.3	31.4	15.0	0.323	1.43	1.92	19.4
Country of birth								
Austria	16.4	23.8	38.0	21.8	0.364	1.74	2.08	86.3
EU-15	21.9	22.8	34.3	21.0	0.380	1.64	2.09	2.4
Former Yugoslavia	9.0	18.2	45.6	27.2	0.373	2.05	2.25	4.9
Turkey	4.8	6.9	22.7	65.6	0.743	3.07	3.22	1.6
Religious affiliation								
Catholic	13.8	22.3	40.0	23.9	0.374	1.83	2.13	73.7
Protestant	16.0	24.7	39.5	19.8	0.334	1.71	2.03	4.8
Muslim	6.1	10.2	31.9	51.8	0.619	2.71	2.89	3.2
No affiliation	31.0	32.0	27.2	9.8	0.264	1.19	1.73	12.5
Level of education								
Tertiary: university	29.8	24.0	32.1	14.1	0.305	1.35	1.93	7.0
Tertiary: academy (teachers & social workers)	18.1	21.2	40.1	20.6	0.339	1.69	2.07	5.2
Higher secondary: comprehensive grammar school & practical training	22.3	25.3	35.3	17.1	0.327	1.54	1.98	9.4
Lower secondary: apprenticeship & practical training	14.3	25.0	40.0	20.7	0.341	1.74	2.03	48.7
Basic education	13.5	20.2	36.5	29.8	0.449	1.99	2.30	29.7

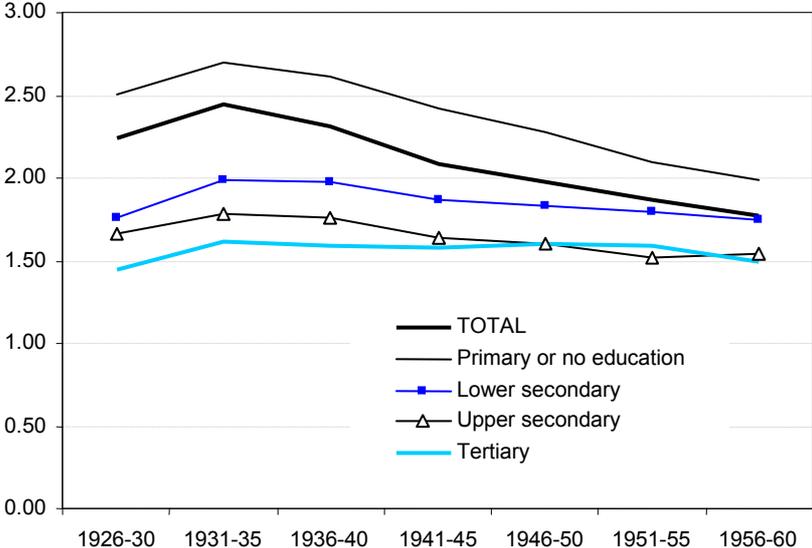
Source: Population census 2001 (Statistics Austria 2005c)

With respect to religious affiliation, two sub-populations represent the opposite extremes of fertility differentials in Austria. On the one hand, women without religious affiliation typically have the highest childlessness (31 percent), the lowest prevalence of larger families (with only one in ten having three or more children) and overall very low fertility: their mean number of children per woman (1.19) as well as their mean number of children per mother (1.73) are the lowest among all the socio-economic groups considered here. On the other hand, Muslim women, representing 3 percent of the total female population born in the period 1955-60, had high fertility levels, similar to the Turkish-born women, who constitute about one-half of the Muslim minority. They have, however, experienced a pronounced decline in completed fertility, from 4.2 children per woman in the 1926-30 cohorts to 2.7 children per woman in the 1955-60 cohorts. In between these two extremes, Catholics, who represented almost three-quarters of the total population in 2001, have slightly lower childlessness and higher completed fertility than Protestants. The differences between these two groups have diminished over time.

A look at fertility differences by education level confirms the usual gradient, i.e. lowest childlessness, highest progression rates to a third child and completed fertility close to replacement level among women with basic education, and high childlessness coupled with a

low level of completed fertility among women with a university education. Fertility differentials by level of education gradually declined among the cohorts born in the 1930s-1950s due to reductions in family size among women with lower educational degrees. Fertility rates remained rather low around 1.5 births per woman among the group with tertiary education and declined slightly, reaching the same level among those with upper secondary education. In addition, Spielauer (2005) also found large fertility differentials by profession. Women graduating from academies (e.g., training colleges for teachers and social workers) are the main exception from the usual educational pattern, with the cohorts born after 1950 showing lower childlessness and higher fertility than other women with tertiary education. In contrast, particularly high levels of childlessness were found among female scientists (Buber et al. 2011). Rising educational attainment explains part of the observed decline in completed fertility, which has been progressing more rapidly than the decline in completed fertility within all educational categories except that of women with basic education.

Figure 3: Completed family size by level of education, cohorts 1926-1960



Sources: Austria: population census 2001 (Statistics Austria 2005).

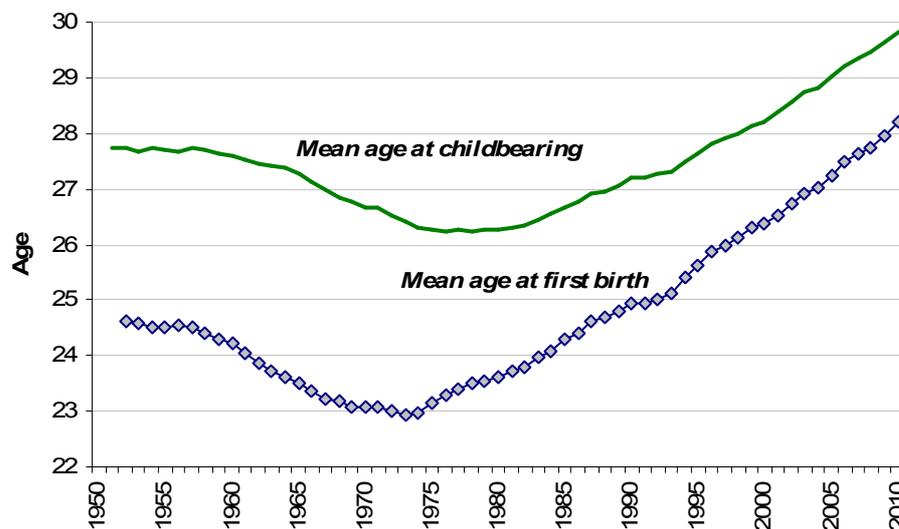
Period fertility tempo and quantum

The post-war baby boom reached its peak in 1963 and was followed by a pronounced decline in fertility that lasted until the mid-1980s. This decline was primarily driven by the gradual spread of a two-child family model and a related decline in fertility at third and higher birth orders. The period fertility level has remained relatively stable since the mid-1980s and the shift towards later parenthood has become the most prominent feature of recent period fertility trends.

Especially first births have been postponed to later ages; the mean age of mothers at first childbirth increased by five years since the mid-1970s, surpassing 28 years in 2010. In Austria, as in other developed countries, a substantial portion of postponed family formation

can be explained by prolonged education and the later graduation age of students. The widely observed fact that being enrolled in education strongly inhibits fertility (e.g. Vikat 1994, Liefbroer and Corijn 1999, Hoem 2000) also holds true for Austria. A distinction between full-time and part-time education shows that full-time education reduces entry into motherhood to a greater extent (Buber 2001).

Figure 4: Selected indicators of the timing of childbearing and first birth (1951-2010)



Sources: Population census 2001 (unpublished tabulations) and authors' own computations based on the database of births in 1984-2010 provided by Statistics Austria

Note: Data on mean age at first birth for 1952-1983 were estimated by Anna Štátná (RILSA, Prague) and Tomáš Sobotka on the basis of unpublished retrospective records collected in the 1981 Census and provided by Statistics Austria

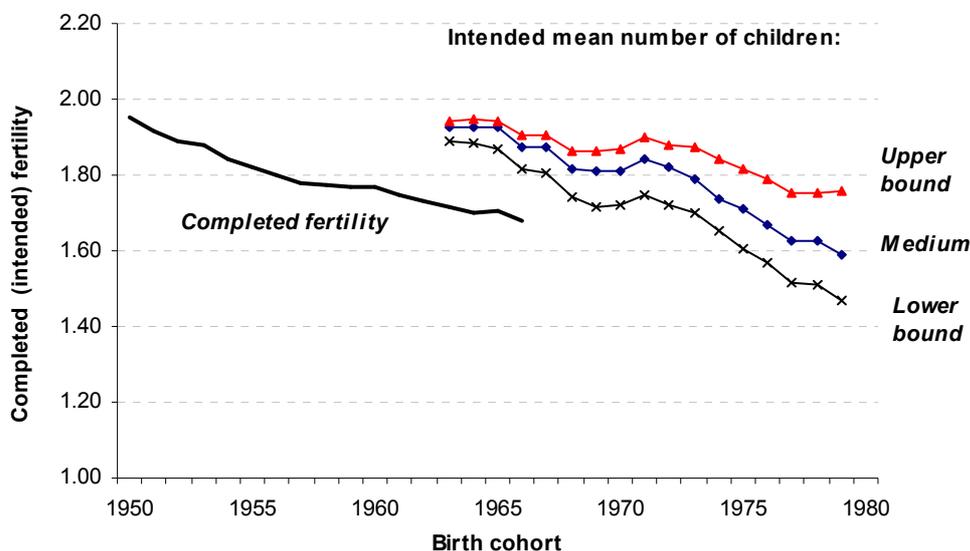
Fertility intentions

Fertility intentions are key for understanding fertility behaviour. The difference between intentions and behaviour can be explained by a set of factors including unintended pregnancies, competing preferences for career or leisure activities, limited policy support for families with children (including child care availability), economic hardship, partnership disruption, infertility and gender preferences for children. Figure 5 compares the completed fertility for Austrian women born between 1950 and 1966 with the mean intended number of children for the cohorts of 1956 to 1979 based on the 2001 Microcensus survey. The upper and lower bounds in the estimated mean intended family size reflect the high share of respondents who were uncertain about their fertility intentions, and different assumptions on how to treat these respondents (see Sobotka 2009). The figure suggests a considerable level of unsubstantiated optimism regarding the intended family size among women in their late reproductive years (cohorts born in the mid-1960s), who desired 0.2 children more on average than they were likely to achieve. The higher level of intended fertility among the younger cohorts born in the early 1970s is less surprising. Such a gap between intended and eventually realised fertility is commonly found in many advanced societies (Bongaarts 2001).

The figure shows a declining desired family size for the cohorts born after 1970, with a medium estimate at 1.63 for the women born in 1978. Although the declining intended mean

number of children among women born in the second half of the 1970s may serve as an indicator of a possible further decline in completed fertility, a portion of this trend may be explained by a specific age effect. The analysis of time series of fertility intentions shows that Austrian women typically have low fertility intentions at young adulthood (below age 25) and later show a slight increase in their fertility desires as they approach the age of 30. Interestingly, women born in the late 1950s already expressed sub-replacement fertility intentions (below two children per woman) when asked in the 1986 survey. More recent data collected by the Generations and Gender Survey (GGS) in 2008 suggest, however, higher reproductive intentions among Austrian women of reproductive age, which are centred closer to two children per women (Neuwirth et al. 2011, Buber and Neuwirth 2009). Whether this is caused by different methodology and slight differences in questions asked or whether it constitutes a real upturn in intended family size remains to be seen.

Figure 5: Completed fertility among women born 1950-1966 and intended mean number of children among women born 1963-1979



Sources: Microcensus 2001 for intended family size; cohort fertility data from Figure 1 for completed fertility.

Notes: The data on fertility intentions are weighted to be representative of the whole population of Austria and smoothed (5-year [cohorts] moving averages are used) to reduce random fluctuations attributable to a small number of respondents in each birth cohort. The higher (upper bound) estimate excludes the answers of undecided women; medium estimate assumes that women who are uncertain about their childbearing intentions and could not provide any range of their childbearing desires when asked do not intend to have an additional child, and the lower bound estimate assumes that all the undecided respondents do not wish to have an additional child.

Living arrangements and non-marital childbearing

Like most other western European countries, Austria has early home-leavers, with a median age of 19.9 years for women born around 1960 (Billari et al. 2001) whereas leaving the parental home before one's twentieth birthday becomes less common for younger cohorts. This trend is related to the increasing length of schooling and training (Landler 1997). Data for the birth cohorts 1942 to 1986, based on the 2001 Microcensus survey, reveal that the majority of women have left home by the age of 30 and only few move out later than that. By the age of 35, only one out of ten women still lives with at least one of her parents. According to the recent Generations and Gender Survey, four out of ten men and two out of ten women aged 25 to 29 years were living with their parents in 2008, the proportion decreasing to 20

percent and 8 percent, respectively, for the age group 30 to 35 years (Buber and Neuwirth, 2009).

Historically, Austria has had a long tradition of non-marital childbearing dating back to the 17th and 18th centuries. Births outside of formal wedlock were particularly common in Alpine valleys, especially in Carinthia (Kytir and Münz 1986, Haslinger 1982, Mitterauer 1985). During most of the 20th century, Austria recorded the highest non-marital birth rate in Europe and has only been 'overtaken' by the Nordic countries (especially Sweden, Denmark and Iceland) since the 1970s. In 2010, four out of ten births were born outside marriage (Statistik Austria 2011), and especially first births commonly occurred before marriage. Interestingly, one out of four women living in a non-marital union at conception was married at childbirth.

Conclusions

Austria has a long history of sub-replacement fertility, spanning back to the late 19th century cohorts. From this perspective, contemporary low levels of period as well as cohort fertility are not surprising. It is rather the baby boom, affecting women born in the 1920s and 1930s and temporarily bringing completed fertility above two children per woman, which brought an unexpected interruption to long-term trends. In view of the rather stable fertility trends in the past three decades, marked by an absence of sudden shifts in fertility timing and fertility levels, we expect the period fertility level to remain stable in the near future unless substantial changes in family-related policies take place. We also expect that the gradual shift towards later childbearing may continue for another decade, as Austrian women have not yet reached as high ages at first childbirth as their peers in many other European countries, e.g. Italy, the Netherlands, Spain, Sweden and Switzerland. Prolonged education and higher labour force participation among women are likely to push the age for starting a family yet further up.

Different factors that are likely to affect future fertility trends may balance each other. On the 'negative' side, continuing secularisation among the mainstream population, sub-replacement fertility intentions among young adults as well as the ongoing trend towards higher education and delayed parenthood suggest a possible further decline in fertility. A number of structural constraints to a better combination of work and family life may also prevail. Previous analyses (e.g., OECD 2003) indicated that Austria has low fertility rates despite the highest family spending rates among the OECD countries. This indicates that structural constraints—such as the availability of child care—constitute part of the explanation for low fertility. On the other hand, the continuing positive impact of immigrants with higher fertility rates on Austrian fertility, better accessibility to assisted reproduction techniques for sub-fertile couples, the relatively good economic situation of the country and gradually improving policies aiming at reconciling work and child care might have a positive impact on fertility.

References

- Billari, F., D. Philipov, and P. Baizán (2001). "Leaving Home in Europe: The Experience of Cohorts Born Around 1960." *International Journal of Population Geography* 7: 339-356.
- Bongaarts, J. (2001). "Fertility and reproductive preferences in post-transitional societies." In: R. A. Bulatao, J. B. Casterline, editors. *Global fertility transition*. Supplement to *Population and Development Review* 27: 260-281.
- Buber, I. (2001). "Einflussfaktoren für die Geburt eines ersten Kindes in Österreich. Bildungsspezifische Muster und 'Aufholeffekte'. Erfahrungen mit Elternschaft und Kinderwunsch." *Demographische Informationen* 2001: 15-29.
- Buber, I., C. Berghammer und A. Prskawetz (2011). "Doing science, forgoing childbearing? Evidence from a sample of female scientists in Austria." VID Working Paper 1/2011. Available at: http://www.oeaw.ac.at/vid/download/WP2011_01.pdf
- Buber, I. and N. Neuwirth (eds.) (2009) Familienentwicklung in Österreich. Erste Ergebnisse des "Generations and Gender Survey (GGS)" 2008/09, Vienna. Available at: <http://www.ggp-austria.at/familienentwicklung.pdf>
- Frejka, T. and J.-P. Sardon (2004). "Fertility in Austria: Past, present and the near future." *Vienna Yearbook of Population Research* 2004: 35-55.
- Geburtenbarometer. (2011). *Geburtenbarometer: Monitoring of Fertility in Austria and Vienna*. Annual report for 2010 published in German at http://www.oeaw.ac.at/vid/download/Geburtenbarometer_Ergebnis_2010.pdf
- Haslinger, A. (1982). "Uneheliche Geburten in Österreich. Historische und regionale Muster." *Demographische Informationen* 1982: 2-34.
- Hoem, B. (2000) Entry into motherhood in Sweden: the influence of economic factors on the rise and fall in fertility, 1986-1997. *Demographic Research* 2, Article 4. Available at <http://www.demographic-research.org/Volumes/Vol2/4>.
- Kytir, J. (2005). "Demographische Strukturen und Trends 2001-2004". *Statistische Nachrichten* 2005(9): 776-789.
- Kytir, J., and R. Münz (1986). "Illegitimität in Österreich." *Demografische Informationen* 1986: 7-21.
- Landler, Frank (1997). *Das österreichische Bildungswesen in Zahlen. Analyse und Computersimulation des Schulsystems und der Qualifikationsstruktur der Bevölkerung*. Vienna: WUV-Universitätsverlag.
- Liefbroer, A. C., and M. Corijn (1999). "Who, what, where and when? Specifying the impact of educational attainment and labor force participation on family formation." *European Journal of Population* 15, 45-75.
- Mitterauer, M. (1985). *Ledige Mütter*. München: Beck.
- Neuwirth, N., A. Baierl, M. Kaindl, C. Rille-Pfeiffer, and G. Wernhart (2011.) Der Kinderwunsch in Österreich, Umfang, Struktur und wesentliche Determinanten. Eine Analyse anhand des Generations and Gender Programme (GGP). Forschungsbericht 5. Vienna: Austrian Institute for Family Studies.
- OECD (2003). *Babies and bosses. Reconciling work and family life*. Vol. 2: Austria, Ireland and Japan. OECD, Paris.
- Prioux, F., M. Mazuy and M. Barbieri. 2010. "Recent demographic developments in France: fewer adults live with a partner." *Population-E* 65(3): 363-414.
- Prskawetz, A., T. Sobotka, I. Buber, H. Engelhardt, and R. Gisser (2008). "Austria: Persistent low fertility since the mid-1980s." In: T. Frejka, T. Sobotka, J. M. Hoem, and L.

- Toulemon (eds.) Childbearing trends and policies in Europe. Demographic Research, Special Collection 7, Vol. 19, Article 12, pp. 293-360. Available under: <http://www.demographic-research.org/Volumes/Vol19/12/>
- Sobotka, T. (2008). "The rising importance of migrants for childbearing in Europe." *Demographic Research*, Special Collection 7, Vol. 19, Article 9, pp. 225-248.
- Sobotka, T. (2009). "Sub-replacement fertility intentions in Austria." *European Journal of Population* 25(4): 387-412.
- Sobotka, T. (2011). "Fertility in Austria, Germany, and Switzerland: Is there a common pattern?" Submitted to *Comparative Population Studies*.
- Sobotka, T., K. Zeman, R. Lesthaeghe, and T. Frejka. (2011). "Postponement and recuperation in cohort fertility: new analytical and projection methods and their application." *European Demographic Research Papers 2011-2*. Vienna: Vienna Institute of Demography.
- Sobotka, T., M. Winkler-Dworak, M. R. Testa, W. Lutz, D. Philipov, H. Engelhardt and R. Gisser (2005). "Monthly Estimates of the Quantum of Fertility: Towards a Fertility Monitoring System in Austria." *Vienna Yearbook of Population Research* 2005: 109-141. The article and online appendices are available at: http://www.oeaw.ac.at/vid/publications/VYPR2005/abstract_Sobotka_et_al.html
- Spielauer, M. (2005). "Concentration of reproduction in Austria: General trends and differentials by educational attainment and urban-rural setting." *Vienna Yearbook of Population Research* 2005: 171-195.
- Statistics Austria (2011) Statistiken. Bevölkerung. Geburten. Available under: http://www.statistik.at/web_de/statistiken/bevoelkerung/geburten/index.html
- VID. (2010). *European demographic data sheet 2010*. Vienna Institute of Demography and IIASA. Accessible at <http://www.oeaw.ac.at/vid/datasheet/index.html>
- Vikat, A. (1994). *Family formation in Estonia*. Tallinn: Ühiselu.
- Zeman, K., T. Sobotka, R. Gisser, M. Winkler-Dworak, and W. Lutz. (2011). "Geburtenbarometer Vienna: Analysing Fertility Convergence between Vienna and Austria." *VID Working Paper 07-2011*, Vienna: Vienna Institute of Demography.