Demographic Research a free, expedited, online journal
of peer-reviewed research and commentary
in the population sciences published by the
Max Planck Institute for Demographic Research
Konrad-Zuse Str. 1, D-18057 Rostock · GERMANY
www.demographic-research.org

DEMOGRAPHIC RESEARCH

VOLUME 19, ARTICLE 9, PAGES 225-248
PUBLISHED 01 JULY 2008
http://www.demographic-research.org/Volumes/Vol19/9/
DOI: 10.4054/DemRes.2008.19.9

Research Article

Overview Chapter 7: The rising importance of migrants for childbearing in Europe

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This publication is part of Special Collection 7: Childbearing Trends and Policies in Europe (http://www.demographic-research.org/special/7/)

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research article

Overview Chapter 7: The rising importance of migrants for childbearing in Europe

Tomáš Sobotka[1]

Abstract

This contribution looks at the influence of immigration on childbearing trends in the countries of Western, Northern and Southern Europe, which have received relatively large numbers of immigrants during the last decades. It analyses the contribution of migrants to the total number of births and compares fertility rates of migrant women with the fertility rates of native women, pointing out huge diversity between migrant groups. It also discusses the evidence regarding the progressive 'assimilation' in migrants' fertility to the local fertility patterns and analyses the net impact of migrants on period fertility rates. This review reveals that migrant women typically retain substantially higher levels of period fertility than the 'native' populations, but this difference typically diminishes over time and with the duration of their stay in a country. Immigrants contribute substantially to the total number of births and their share of total births has increased in the last decade, exceeding in some countries one fifth of the recorded live births. However, the 'net effect' of the higher fertility of migrants on the period total fertility of particular countries remains relatively small, typically between 0.05 and 0.10 in absolute terms.

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1. Introduction

Immigration to Europe, especially to the European Union (EU), has surged in the last two decades due to a combination of multiple factors, including the general increase of mobility and easier international travel, the economic malaise in many post-communist countries after the collapse of state socialism, violent conflicts and instability in the Balkans and other areas. Also successful enlargement of the EU, which has progressed hand in hand with economic integration, has played a significant role. Migration and its various effects on the economy (including the overall economic performance, gross domestic product (GDP) growth, wages, employment and the labour market) and society are vigorously debated in the media on a daily basis. Overall, the economic and social effects of migration are difficult to assess and disagreement frequently exists among experts and researchers[2]. Migration involves various conflicts of interest which may contribute to an ambiguous assessment regarding the overall impact of immigration. For instance, the positive impact of immigration on the economic growth of a country may be counterbalanced by its negative impact on wages and employment prospects of some segments of the 'native' population, especially low-skilled workers (Boeri and Brücker 2005).

Migration constitutes a powerful component of demographic change, albeit one that is difficult to trace. After 1990 migration has become the main engine of population growth in many countries of Europe. It is gradually transforming European population in a manner unforeseen by various population projections (Coleman 2006). In 2004 the European Union (EU-25) recorded the highest population increase since 1972—0.54 percent—of which 0.38 percent was attributable to a positive migration balance (Eurostat 2006a, 2006b). Consequently, the EU has received larger migration streams since the early 2000s than the United States, which often serves as a model country of immigration. However, migration is also the most unstable and the least predictable component of population change (Alho et al. 2006). Despite the wealth of migration theories, projections of migration "continue to rely on ad-hoc assumptions based on little theory and virtually no definable methodology" (Howe and Jackson 2005: 1). Spain, which was until 1990 a country with negative migration balance, provides a telling example of the unexpected effects of migration on population change. Between 1999 and 2006 the total population of Spain rose by 4.0 million persons, i.e., by 10.2 percent, of which 9.3 percent was due to migration (Eurostat 2006a, Council of Europe 2006, Roig Vila and Castro Martín 2007; see also Spain chapter[*]).

[2] See Coleman and Rowthorn (2004) for an example of a debate on the economic costs and benefits of immigration to the United Kingdom.

[*] All country chapters referred to can be found online at: http://www.demographic-research.org/special/7/.

Besides contributing directly to population size and composition, migration has a broader demographic impact on each society, especially when immigrant populations have different levels and patterns of fertility, union formation and mortality. Most expert analyses and projections of population trends focus exclusively on the direct influence of migration on population size and composition and ignore the potentially important contribution of immigrants on birth rates and childbearing trends (country studies in Haug, Compton and Courbage 2002 are among important exceptions). At the same time, the wider public in many developed countries often believes that immigrants have high birth rates that may place the provision of welfare support to families under strain and may even eventually lead to an outnumbering of the native majority by a population of foreign origin. Immigrants might also be perceived as the main factor behind the recent rise in period fertility in a number of European countries (e.g., Héran and Pison 2007 for the case of France; see also below).

This contribution scrutinises contemporary evidence regarding the effects of immigration on childbearing trends in European countries. These effects have a growing relevance for the societies of Western, Northern, Southern, and recently also Central Europe. Focusing on these regions, I consider the contribution of migrants to the total number of births, compare fertility rates of migrant women with fertility of the native women and point out the heterogeneity between different migrant populations. Subsequently, I discuss the pace of 'assimilation' in migrants' fertility to local fertility patterns and the net impact of migrants on period fertility rates. In conclusion, this article lays emphasis on the multifaceted impact of migration on childbearing trends and population change. Given space limitations, lack of data and lack of comparative studies, this contribution focuses almost exclusively on women and does not discuss the effects of internal migration, short-term migration and illegal migration. It pays very little attention to the impact of emigration on fertility and also neglects immigrants' fertility in the post-communist countries of Central and Eastern Europe, where data availability is limited and larger-scale immigration either constitutes a very recent phenomenon or was an outcome of these countries being parts of larger state units (Czechoslovakia, Soviet Union and Yugoslavia).

2. Concepts and data limitations

Migration is linked to childbearing trends in a number of distinct ways. Considerable confusion therefore exists about the effects of migration on fertility. Several conceptual issues outlined below are of paramount importance for any understanding of these effects.

(1) Different definitions of what a migrant is are used by various statistical agencies. With respect to immigrants, the most common categorizations are those of foreign-born persons and persons with foreign citizenship. The latter category is problematic in statistics on migrants, as its size frequently depends more on national legislation on citizenship of a country of residence than on the size of immigration streams. There are vast differences between countries in the rate of *naturalisation* and the average period elapsing between immigration and naturalisation. Due to incomplete or missing records, there are also very few data on births to immigrant men, which means that statistics on the proportion of births with at least one immigrant parent is also usually unavailable. A study of the effects of immigration on fertility can be limited to the first generation of migrants, or it can also include the second and the third generation (see the Netherlands chapter).

(2) When assessing the effects of migration on fertility and population change, different estimates and assumptions should be made about the fertility and mortality of emigrants and immigrants. In practice, lack of data limits such empirical studies. Any analysis of the effects of migration on childbearing trends commonly takes differential fertility of immigrants into account, but usually ignores the potential fertility differentials due to emigration. This is because of the absence of information on childbearing patterns of emigrants and the impossibility of assessing how emigrants would have behaved if they had stayed in their country of origin (see Albania chapter). Practically all available studies focusing on European countries analyse the impact of legal migration and disregard the impact of illegal migration.

(3) Given these limitations, research on the effects of migration on fertility is usually confined to legally resident immigrant women. Several types of analysis can be distinguished. First, the effect of (im)migration on the total number of births can be analysed from the data on births by the country of origin of the mother and/or the father. Second, a comparative analysis of period and cohort fertility for different groups of migrants sheds light on their heterogeneity in childbearing patterns. Third, the *net migration effect* on fertility rates can be estimated when comparing the observed fertility rates with those that would have been achieved in the absence of (im)migration. Any analysis of migrants' period fertility rates is complicated by the interrelation between the events of migration and fertility, which distorts the commonly used period fertility measures. These are based on the assumption that fertility is a function of age, whereas immigrants' fertility rates are more closely linked to the timing of migration rather than their actual age (Toulemon 2004, Andersson 2004, Østby 2002, Alders 2000; see also France chapter).

3. Contribution of immigrants to the total number of births

The proportion of births to immigrant women provides a basic indication of the importance of immigrants for childbearing. This measure is a function of past immigration levels, the age composition of immigrants, and their fertility rates. In practice, most countries collect data on the proportion of births to women with foreign nationality (see also above). Since many women eventually obtain the nationality of their new host country, these statistics constitute a downward-biased approximation of immigrants' contribution to the total number of births in a country.

Table 1 summarises the percentage of births to immigrant or foreign-nationality women in eleven European countries with a recent history of sizeable migration streams. Births to immigrant women contribute considerably to the recorded total number of births in the analysed regions: well above one tenth of all births are attributable to immigrant women, even when the partial data on foreign nationals are considered. This share is typically higher than the proportion of immigrants, since migrant women tend to be younger and more fertile than the native population (see also below). Births to immigrant women currently account for around one fifth of all births in England and Wales, the Netherlands, Sweden and Germany (German data are for foreign nationals only), whereas in Switzerland women with foreign nationality contribute more than one quarter of the total number of births. When the second generation of immigrants is also considered, immigrant women account for more than one fifth of births in France (data pertain to 1998 and exclude French nationals born abroad) and more than a quarter of births in the Netherlands.

Almost all countries analysed in Table 1 have recorded a steady increase in the share of immigrant (or foreign-nationals) births since the mid-1990s, in part as a consequence of high immigration rates in the 1990s and the early 2000s. This trend has been most prominent in southern Europe, especially in Spain, where the proportion of births to mothers with foreign nationality rocketed from 3 percent in 1996 to 16 percent in 2006 (see also Roig Vila and Castro Martín 2007 and the chapters on Italy and Spain). In another 'high migration' region, England and Wales, the proportion of births to immigrant women rose from 13 to 22 percent between 1995 and 2006. The share of births to immigrant women is often strongly regionally differentiated, reflecting regional contrasts in the share of immigrant populations. For instance, in Italy, where 12.2 percent of children were born to foreign mothers in 2005, this indicator ranged from 3.3 percent in the islands and 3.7 percent in the south to 17.6 percent in the north-west and 18.6 percent in the north-east (ISTAT 2007). This share is highest in large cities, which traditionally serve as magnets for immigration. In many major European cities, the share of immigrant births approaches 50 percent (Coleman 2006: 427).

Table 1: Proportion of births to immigrant women and to parents of foreign nationality, selected years (different definitions)

	Period	Births to immigrant women (%)	Births to immigrant women, 1st + 2nd gen. (%)	Births to mothers with foreign nationality (%)	At least one parent foreign national (%)	Source
Austria	2000			13.5		Kytir 2006
	2005			11.7		Kytir 2006
Belgium (Flanders)	2003–2004	16.8[1)]		12.4		VAZG 2007
Denmark	1999-2003	13.5		11.1		Statistics Denmark 2004
England and Wales	1980	13.3				Schoorl 1995
	1995	12.6				ONS 2006
	2005	20.8				ONS 2006,
	2006	21.9				ONS 2007
France	1991–98	12.4				Toulemon 2004
	1998		21[2)]		14.5	Prioux 2005, Tribalat 2005
	2004	15		12.4 (2005)	18.2	Prioux 2005, Héran and Pison 2007
Germany	1980			15.0		Schoorl 1995
	1985			11.2		Schoorl 1995
	1995			16.2		Statistisches Bundesamt 2006
	2004			17.6		
Italy	1999			5.4		ISTAT 2007
	2004			11.3		ISTAT 2007
	2005			12.2		ISTAT 2007
The Netherlands	1996	15.5	21.0[3)]			CBS Statline 2006
	2005	17.8	25.5[3)]			CBS Statline 2006
Spain	1996			3.3	4.5	
	2000			6.2	7.9	INE 2006 and 2007, Roig Vila and Castro Martín 2007
	2004			13.7	16.9	
	2006			16.5		
Sweden	2005	19.5		11.8		Statistics Sweden 2006
Switzerland	1980			15.3		Coleman 2003
	2000			22.3		Coleman 2003
	2005			26.3		SFSO 2006

Note: Figures shown without decimal points are not available with higher precision.

[1)] Births to women with other than Belgian nationality at the time of their birth. This share excludes immigrants born with Belgian nationality and births to women with unknown nationality at their birth (6.2 percent).

[2)] When 'repatriate' women (i.e., French nationals born abroad) are included, births to immigrant women of the first and second generation made up 26.5 percent of all births in 1998 (Tribalat 2006, Figure 12).

[3)] Births to the second generation of immigrants are defined as births to women born in the Netherlands, where one or both parents have immigrated to the Netherlands.

4. Differential fertility rates: immigrants vs. native women

Several contributions have argued that the commonly used period total fertility rate (TFR) cannot serve as a reliable indicator of the level of immigrants' fertility (Andersson 2004, Toulemon 2004). Schoorl (1995: 103) proposes that migrants' TFR reflects "various aspects of the migration process: selective migration and migration policies, disruption of the process of family formation due to migration, the degree to which migration is marriage migration, and—in time—adaptation or assimilation". This potential distortion in the TFR is particularly large for women with foreign nationality, who, depending on the process of naturalisation, constitute a select group of women with a relatively short duration of stay in the country. Thus, the closer immigration is linked to childbearing and the faster the process of naturalization, the more biased is the period TFR for foreign women. However, with the exception of alternative estimates of the TFR for France adjusted for age at entry and duration of stay (Toulemon and Mazuy 2003, Toulemon 2004, see also France chapter), there are no other readily available alternative indicators of immigrants' fertility rates. Despite its drawbacks, the period TFR gives a basic picture of the major trends in fertility of immigrants, differences between immigrants from various regions, and the overall impact of immigration on the observed TFR of national populations.

Tables 2a and 2b provide a summary of recent data on the period TFR by migration and nationality status in twelve countries of Western, Northern and Southern Europe. Whatever definition is used, immigrant women, when analysed together, have considerably higher fertility than native women. The TFR of all immigrant women typically ranges between 2.0 and 2.5 and is thus by 0.3-0.8 higher than the TFR of native women. Toulemon's (2004) estimates of the TFR in France, adjusted for age at immigration, also fit into this pattern, although these data show a strong reduction in fertility differentials between immigrant and native women (see France chapter). The more problematic data for foreign nationals depict higher variability in the TFR for foreign women, ranging from 1.9 (Switzerland in 1997) to 3.3 (France in 2004). In all cases, the TFR of foreign women also markedly exceeds the TFR of women with local nationality; for instance the TFR of foreign women in Italy and Flanders (Belgium) is twice as high as the TFR of women with Italian and Belgian nationality. Trends over time differ between countries, but typically indicate a gradual diminishing of differences between the fertility levels of immigrants and foreigners on one side and natives on the other (see the Netherlands chapter). However, a case of a complete convergence has not thus far been recorded (for an overview of trends, see Coleman 1994, Schoorl 1995 and the contributions in Haug, Compton and Courbage 2002).

Table 2a: Total fertility rate of native and immigrant women

Country	Period	TFR			Source
		Native women	Immigrant women	Difference	
Denmark	1999–2003	1.69	2.43[1)]	0.74	Statistics Denmark 2004
England and Wales	2001	1.6[2)]	2.2	0.6	ONS 2006
France	1991–98	1.65	2.50	0.85	Toulemon 2004
	1991–98	1.70[3)]	2.16[3)]	0.46[3)]	Toulemon 2004
The Netherlands	2005	1.65	1.97	0.31	CBS 2006
Norway	1997–98	1.76	2.42	0.66	Østby 2002
Sweden	2005	1.72	2.01	0.29	Statistics Sweden 2006

Table 2b: Total fertility rate of women with local and foreign nationality

Country	Period	TFR			Source
		'Native Nationals'	Foreign Nationals	Difference	
Austria	2001–5	1.29	2.03	0.74	Kytir 2006
Belgium	1995	1.49	2.13	0.64	Poulain and Perrin 2002
Flanders (Belgium)	2001–5	1.50	3.00	1.50	van Bavel and Bastiaenssen 2006
France	1999	1.72	2.80	1.08	Héran and Pison 2007
	2004	1.80	3.29	1.49	Héran and Pison 2007
Italy	2004	1.26	2.61	1.35	ISTAT 2006
Spain	2002	1.19	2.12	0.93	Roig Vila and Castro Martín 2007
Switzerland	1997	1.34	1.86	0.52	Wanner 2002

[1)] Excluding immigrant women born with Danish nationality.
[2)] Figures not available with a higher precision.
[3)] Data adjusted for age at arrival to France and duration of stay in France.

5. The heterogeneity in immigrants' fertility

The overall differences in the TFR reported above hide a large heterogeneity between different groups of migrants. Migrants from certain countries and regions, such as Bangladesh, Morocco, Pakistan and parts of sub-Saharan Africa usually have a TFR far exceeding that of native populations in Europe. This pattern appears to be consistent for the first generation of migrants across different countries. In contrast, migrants from other regions of Europe and the Caribbean display a TFR similar to the natives (e.g., Coleman 1994).

Table 3 provides an illustration of some of these contrasts for a few European countries with statistics on the TFR of immigrants by country of origin. It shows the TFR of two high-fertility groups of migrants (Somalians and Pakistanis) compared with the TFR of women born in Turkey, Iran and Western Europe. The first two groups have a TFR that exceeds the TFR of the host country by a factor of two or more, ranging from 3.6 (Pakistani women in Denmark and Norway) up to 5.2 (Somali women in Denmark and Norway). Turkish women also have an elevated TFR level, which exceeds the TFR in their host country and frequently even the TFR of Turkey[3], but is well below the TFR of Somali, Pakistani, as well as Bangladeshi, Iraqi and Moroccan women (not shown here). European immigrants usually have a TFR close or somewhat below that of the host country. This also applies to women from Iran, who in the Netherlands and Sweden reached very low TFR levels, below 1.5.

Table 3: TFR of immigrant women from Somalia, Pakistan, Turkey, Iran and Western Europe

		Country (region) of origin					
Country of residence	**Period**	**Somalia**	**Pakistan**	**Turkey**	**Iran**	**(Western) Europe[3)]**	**Source**
Austria	2000–05[1)]			2.96			Kytir 2006
Denmark	1999–2003	5.21	3.58		1.84	1.57	Statistics Denmark 2004
England and Wales	2001		4.7				ONS 2006
France[2)]	1991–98			3.21		1.66	Toulemon 2004
The Netherlands	2005	4.4 (1999)		2.22	1.1 (1999)	1.45	CBS 2006; the Netherlands chapter
Norway	1997-8	5.2	3.59	3.09	1.92	2.02	Østby 2002
Sweden	2005	3.82		2.62	1.31	1.57	Statistics Sweden 2006

[1)] Women without Austrian nationality.
[2)] Data adjusted for age at immigration and duration of stay in France.
[3)] Denmark: EU-15 countries; France: EU-15 countries except Italy, Portugal and Spain; The Netherlands: 'western immigrants' (Europe, North America, Oceania, Indonesia and Japan); Norway: Western Europe; Sweden: EU-25 excluding Nordic countries.

[3] The TFR in Turkey shows a steadily declining trend over time, reaching 2.57 in 2000 and 2.19 in 2005 (Council of Europe 2006 and Eurostat 2006a).

These examples were selected to illustrate the heterogeneity in migrants' fertility that lies hidden in summary data for all immigrants in a country. They also show that the differences in fertility rates between ethnic or national groups cannot be explained by a single factor, such as religion. This is most clearly evident in the case of women coming from predominantly Muslim societies who, according to commonly held opinion, have fertility far above that of native women in European countries. Although some Muslim populations in Europe display the highest fertility and the slowest pace of fertility decline (e.g., Coleman 1994: 124; Østby 2002), the contrasting examples of very-high fertility of women from Somalia and Pakistan and low fertility of women from Iran and Indonesia (for the latter group in the Netherlands see Heering et al. 2002) point out that the pronatalist influence of religion, if any, is strongly modified by other factors, including woman's socio-economic position[4].

Four interrelated factors are frequently identified in order to explain higher fertility rates of some migrant groups.[5] First, the *selection hypothesis* emphasizes distinct social characteristics of immigrants (such as their educational level, income, level of integration, and rates of intermarriage) that may be conducive to higher fertility. Kahn (1994) reported that the higher fertility of immigrants in the United States was explained by their socioeconomic and demographic characteristics. Second, the *socialisation hypothesis (or 'culture' hypothesis)* emphasizes the effects of pronatalist culture, norms and values in the region of origin, which is mirrored in the reproductive behaviour of immigrants after their arrival to a new, low-fertility setting. Also relatively low fertility rates, typical of migrant groups coming from low-fertility countries, including migrants from European countries, from the Caribbean and many parts of South America, generally support the socialization hypothesis. Third, the *family formation hypothesis* accentuates the interrelatedness of migration and family formation among many groups of migrants. The frequent finding of elevated fertility of migrants during the first years after their arrival (Alders 2000, Østby 2002, Toulemon and Mazuy 2003, Andersson 2004, Andersson and Scott 2005) may be seen as an outcome of a common 'package' of migration, marriage, and childbearing (Milewski 2007; see also France chapter). It also suggests another selection effect: first-generation migrant women may form a distinct group immigrating mostly for the reasons of family formation and reunion (see Milewski 2007 for the case of West Germany).[6] The family

[4] Esposito (1998) stresses the importance of local context and cultural traditions in explaining the diversity in attitudes to and the actual prevalence of family planning across Muslim societies: "Islam has legitimated and reinforced traditional pronatalist believes and practices in areas where social conditions made large families desirable" (Esposito 1998: 513).

[5] See Forste and Tienda 1996, Abbasi-Shavazi and McDonald 2002, Kulu 2005, and Genereux 2007 for similar sets of explanations of ethnic and migrant differences in fertility.

[6] Alders (2000: 14) found that in the Netherlands the correlation between immigration and childbearing was particularly pronounced for women from Turkey and Morocco: 40 percent of women immigrating at age 20-

formation hypothesis contrasts with the *disruption hypothesis* that envisions lower fertility among recent migrants, linked to the disruption effect migration may have on partnership formation and childbearing.[7] Although such a disrupting effect of migration has not been found in the existing studies on immigrants' fertility in Europe, some supporting evidence for this hypothesis was found, for instance, among European migrants to Australia (Abbasi-Shavazi and McDonald 2002). Fourth, the *'minority status' explanation* can be proposed to explain both rapid fertility limitation among some groups of migrants as a way of achieving higher social mobility (Forste and Tienda 1996) and the persistence of higher fertility as a defensive response among the more disadvantaged communities with strong ethnic or religious consciousness and slow adaptation to local fertility ideals (Coleman 1994, Fargues 2000, McQuillan 2004).

Immigrants often differ from the native population in many fertility characteristics other than fertility rates. Several contributions in Haug, Compton and Courbage (2002) document an early start of childbearing among many groups of migrant women, especially those from Turkey (see also Italy chapter).[8] Foreign-born women also frequently display markedly lower levels of childlessness (see Garssen and Nicolaas 2006 and the Netherlands chapter) and high progression rates to third and higher-order births (see Austria chapter). This is also in part mirrored in their ideal family size, which remains high among migrants from Pakistan and northern Africa (Penn and Lambert 2002). A striking influence of the culture of the country of origin is demonstrated by vast differences in living arrangements, marriage patterns and non-marital fertility across migrant groups (see Sweden chapter for the case of Turkish young adults in Sweden). Even in societies where non-marital childbearing has become common, immigrants from the more culturally conservative societies realise childbearing exclusively within marriage (various chapters in Haug, Compton and Courbage 2002). In 2005, only two percent of children born in England and Wales to women originating from Bangladesh, India and Pakistan were non-marital, in contrast to 49 percent of children born to native-born mothers (ONS 2006). On the other hand, non-marital births are frequent among women from Latin America and from the Caribbean, in line with patterns in their countries of origin, suggesting again the

30 had a child in the calendar year after the year of their arrival. This pattern was not found for women from Suriname and the Netherlands Antilles.

[7] However, Milewski (2007: 861-862) points out that the 'disruption effect' may also explain elevated birth rates after migration, which may constitute a 'catching up' of childbearing that was postponed or interrupted in the period shortly before and during migration.

[8] De Valk and Liefbroer (2007, Table 2) show that both first and second-generation migrants from the main immigrant communities in the Netherlands (Turks, Moroccans, Surinamese and Antilleans) show a clear preference for an earlier age at motherhood than the native Dutch women and both generations of Turkish and Moroccan migrants preferred a markedly lower mean age at marriage for a woman (below 23) than the Dutch women did (26 years for the younger cohorts).

usefulness of the socialization hypothesis for explaining immigrants' childbearing behaviour. In Spain, a high proportion of non-marital births among the growing population of migrants from Latin America has largely contributed to the recent rapid rise in non-marital fertility in the whole country (see Spain chapter). Finally, immigrant women also display different patterns of contraceptive use and abortion. Immigrants from less developed societies frequently rely on ineffective means of contraception and on abortion. In the Netherlands, 60 percent of women undergoing abortion have an ethnic minority background (see the Netherlands chapter, Fokkema et al. 2008:770).

6. How rapid is the assimilation to local fertility patterns?

Because of the progressive assimilation of each subsequent generation of descendents of immigrants in their union formation and childbearing behaviour and, in a broader sense, their language and ethnic identity, any analysis of long-term effects of migration is very sensitive to assumptions on migrants' assimilation and on the emergence of mixed-origin populations (see Coleman 2006: 413-417).

Most studies find that, within a decade after their arrival, migrants' fertility rates decline to the level close to fertility rates among native women (Schoorl 1995; Toulemon and Mazuy 2004). Furthermore, over time immigrants' expectations about their future childbearing have been found to converge with the birth expectations of native women (Kahn 1994). However, some populations show a slower pace of convergence.[9] Women immigrating at a young age, sometimes called the '1.5 generation,' frequently display similar fertility rates to autochtonous women (Andersson 2004; Toulemon and Mazuy 2004). This 'assimilation' to local fertility patterns has also been reported in the incidence of early childbearing. Østby (2002: 43) found that women who arrived in Norway before age seven became mothers before age 22 much less frequently than women who arrived at a later age. The Sweden chapter highlights two non-demographic factors—educational attainment and exposure to Swedish society (as measured by neighbourhood composition)—which were important for an adaptation of family attitudes and behaviour of young adults from Poland and Turkey to the Swedish patterns. National welfare policies, employment patterns and other institutional factors constitute important mechanisms that facilitate an adjustment of migrants' fertility to 'local' fertility patterns. Andersson and Scott (2005) found a similar effect of labour market position on first birth intensity among different groups

[9] Østby (2002: 42) found that women immigrating to Norway from 'Muslim non-western countries' experience the slowest pace of fertility decline with respect to the duration of their stay. It is unclear to what extent this variable reflects the (pronatalist) influence of Islam and to what extent it reflects other cultural characteristics of specific immigrants' groups and their social composition.

of immigrants in Sweden: for immigrant and Swedish women alike, labour-market activity was positively linked with their propensity to have a first child.[10]

A cohort analysis gives another view on fertility assimilation across cohorts and generations of migrants. As the Netherlands chapter shows, younger cohorts of women from initially high-fertility groups usually display a marked decline in fertility when compared to their older counterparts (see also Alders 2000). This is in part a result of changes in reproductive norms and behaviour in their country of origin, but it is also a sign of an adaptation of their fertility to the conditions of the host country. Frequently, fertility of immigrants from high-fertility societies declines well below the fertility of women in their country of origin (see France chapter and Schoorl 1995). Due to a lack of data fertility patterns of the second and third generation of immigrants are relatively little researched. Dutch data suggest that the fertility level of the second generation of migrants is closer to that of the native women than to the first generation of migrants with the same ethnic origin. For instance, Turkish and Moroccan women from the second generation have much lower levels of cumulated fertility and substantially higher levels of childlessness at ages 25-35 than their first-generation migrant counterparts (Alders 2000, Garssen and Nicolaas 2006)[11].

[10] However, migrant women vastly differ in their labour market status: among childless women in Sweden aged 21-45, the percentage in the labour force having a job as the main source of income was 74 percent for Swedish-born women and 63 percent for migrant women, with a wide range from 10 percent (childless Somali women) to 75 percent (childless women from Finland; see Andersson and Scott 2005, Table 3 and Table A1). Also cross-country differences in the employment rate of migrant women aged 15-64 remain large, ranging from 40 percent in Belgium up to 64 percent in Greece in 2004 (Dumont and Liebig 2004: Figure 4). Despite a common trend of increasing employment rates of migrant women, reflecting in part their rising educational level and also an increase in the importance of work-related migration, migrant women in most countries still have lower employment rates than the 'native' women, especially when they come from non-OECD countries (Dumont and Liebig 2005, OECD 2007).

[11] Research on fertility trends among Mexicans in the United States of America (US) shows, however, that some populations may retain distinct fertility patterns over several generations. The third generation of Mexican-origin population in the US shows elevated fertility rates, with a pronounced peak at young ages (especially 20-24), when their fertility is close to that found among recent immigrants (and also among African-American women) and well above the fertility rates of non-Hispanic white women (Frank and Heuveline 2005). Since fertility rates in Mexico fell below the fertility of the Mexican-origin population in the US, Frank and Heuveline argue in favour of a 'racial stratification perspective' on childbearing behaviour and suggest that Mexican immigrants to the US are increasingly under the influence of 'unique structural factors' that encourage higher and earlier fertility among younger cohorts of Mexican-Americans.

7. The impact of migrants' fertility on total fertility rates

The aggregate net impact of migrants on observed trends and levels in period fertility appears to be relatively small, despite their fertility rates far exceeding those of the native population (see chapters on Austria, England and Wales, France, the Netherlands and Spain). In all eleven countries analysed in Table 4, fertility of immigrant (or foreign-national) women had a slight upward effect on the period TFR. This effect was of comparable size across countries and did not differ greatly when all immigrant women or only foreign-nationality women were analysed[12]: the period TFR shifted upwards by 0.05-0.10 (i.e., by 3-7 percent). In Switzerland, the net positive impact of foreign nationals on the TFR was greater and reached 0.14 in 1997, shifting the TFR upwards by 10 percent. The data for the Netherlands indicate that the inclusion of the second generation of immigrants (also used in the Netherlands chapter) considerably lowers the estimated impact of immigration on the TFR because their fertility rates frequently decline to or even below fertility rates of native women (see above).

This analysis indicates that immigration was not the main factor responsible for the recent upswing in the period TFR in some countries of Europe and that this upswing was mainly due to the rise in the TFR of the native population, probably associated with a slowing down of fertility postponement. The data for the Netherlands support this argument: Between 1996 and 2002, when the period TFR for all women increased from 1.53 to 1.73, the TFR among women born in the Netherlands rose even faster (from 1.47 to 1.69, data from CBS Statline 2006). In France, women with foreign nationality partly contributed to the rise of the period TFR between 1999 and 2004, but a larger part of this increase of 0.11 is attributable to the rise in the TFR among native French women by 0.08 (Héran and Pison 2007, Figure 1; see also Table 2b above).[13]

[12] The similarity of the two estimates of the net effect of immigrants' fertility is apparent in the case of France, where the data for all immigrant women in 1991-98 give the same net effect (+0.07) as the data for foreign-nationality women in 1990 and 1999 (Tables 4a and 4b). A possible explanation is that the selection effect, implying an elevated fertility of foreign-nationality women (as compared to all migrant women), is counterbalanced by their smaller population size, which is important for computing the overall effect on the TFR in a country.

[13] A decomposition of change in the period TFR in Italy and Spain between 1996 and 2004-2005 by Gabrielli, Paterno and Strozza (2007) distinguished between the effects of (1) an increased share of foreigners (estimating thus the direct impact of migration), (2) of the change in the TFR of foreign women, and (3) of the change in the TFR of 'native' women. In the case of Italy, the overall increase in the TFR of 0.11 was attributable to a mixture of all three factors, with the increase in the TFR of the 'native' women being slightly more important (38 percent) and the 'direct' effect of immigration accounting for 33 percent of the difference. In Spain, there was a negative effect of the TFR decline among foreign-born women in this period (changing the overall TFR by -0.04 in absolute terms), which was more than counterbalanced by a positive effect of an increase in the number of foreign women (+0.08) and an even larger positive effect of a change in the TFR of 'native' women (+0.125).

Table 4a: 'Net effect' of immigrant women on the observed period TFR

Country	Period	TFR			Source
		All women	Native women	Net effect	
Denmark	1999–2003	1.760	1.685	0.075	Statistics Denmark 2004
England and Wales	1996	1.74	1.67	0.07	Coleman et al. 2002
France	1991–98	1.72	1.65	0.07	Toulemon 2004
The Netherlands	2000–2005	1.724	1.646	0.078	CBS Statline 2006
The Netherlands [1)]	2000–2005	1.724	1.680	0.044	CBS Statline 2006
Norway	1997–98	1.81	1.76	0.05	Østby 2002 (Lappegård 2000)
Sweden	2005	1.769	1.716	0.053	Statistics Sweden 2006

Table 4b: 'Net effect' of women with foreign nationality on the observed TFR

Country	Period	TFR			Source
		All women	Nationals	Net effect	
Austria	2000–2005	1.39	1.29	0.10	Kytir 2006
Belgium	1995	1.56	1.49	0.07	Poulain and Perrin 2002
Flanders (Belgium)	2001–2005	1.59	1.50	0.09	van Bavel and Bastiaenssen 2006
France	1990	1.78	1.71	0.07	Héran and Pison 2007
	1999	1.79	1.72	0.07	Héran and Pison 2007
	2004	1.90	1.80	0.10	Héran and Pison 2007
Italy	2004	1.33	1.26	0.07	ISTAT 2006
Spain	2002	1.27	1.19	0.08	Roig Vila and Castro Martín 2007
Switzerland	1997	1.48	1.34	0.14	Wanner 2002

[1)] Including the second generation of immigrant women (mother born in the Netherlands, at least one of her parents born outside the Netherlands).

8. The multifaceted impact of migration on childbearing and population trends

Different studies often provide contrasting assessments about the actual and potential contribution of migration to fertility rates, total numbers of births, and also population growth and ageing. Although this partly reflects differences between countries, it is also a reflection of the fact that the evaluation of the importance of migration hinges critically on the specific questions asked. With some simplification, this review pertaining to Western, Northern and Southern Europe has shown that:

- Despite their relatively rapid demographic assimilation, immigrants usually have markedly higher levels of period fertility than the 'native' populations;
- This differential varies widely by country of origin;
- Immigrants contribute substantially to the total number of births;
- The 'net effect' of the higher fertility of immigrants on the total fertility of particular countries is relatively small.

An interaction between the numerical size of immigrants, their relatively young age structure (migration typically occurs at a young age) and their higher fertility implies that migration has a potentially strong and long-lasting impact on population growth and structure. Immigrants are therefore one of the few population groups that record significant rates of natural growth across Europe (Compton and Courbage 2002).

As a result, immigration has increasingly become perceived as a potential means to prevent population decline, sustain the size of the labour force, and slow down the pace of population ageing. As Feld (2005: 638) noted, the "debate on the role of immigration in Europe has been largely undermined by the fact that it has been saddled with a wide range of functions that should each be aiming at a different objective." A well-publicised United Nations (UN) report (UN, 2000) and a number of other studies (e.g., Coale 1988, Feld 2000 and 2005, Lutz and Scherbov 2003, Beaujot 2003 and Holzmann 2005) address these issues, some of them referring to the notion of 'replacement migration' (i.e., migration that 'makes up' for below-replacement fertility and thus enables countries to avoid population decline or even to prevent population ageing). Most studies show that any realistic level of migration cannot stop population ageing and can only have a relatively modest impact in slowing down this process. However, migration is likely to have a considerable (positive) effect on the size of the labour force (Feld 2000, Bijak et al. 2007) as well as on the total population size (UN 2000, Sobotka 2008).

Immigration levels have been consistently under-projected in historical forecasts in many European countries (Alders, Keilman, and Cruijsen 2007, Shaw 2007). The inclusion of recently recorded higher migration rates into population projections postpones the likely start of future population decline in the EU-15 countries, Norway, Iceland and Switzerland after the year 2050 (Alho et al. 2006). Recent research by Dalla Zuanna (2006), focusing on the industrial triangle of north-west Italy and including the effects of internal (south to north) migration, has shown that significant and continuous immigration may slow population ageing and prevent population decline, even in a region experiencing half a century of very low fertility. In addition, the higher fertility of migrants, typically not envisioned in projection scenarios, may further strengthen the importance of immigration for population trends. In the case of Mexicans in the United States, Jonsson and Rendall's (2004) estimates and projections show that the long-term contribution of immigrants to childbearing is frequently underestimated when conventional methods of analysis are used. They also suggest that "differences in the fertility of immigrants and the native born are likely to be the primary cause of any rejuvenation of the population induced by migration" (Jonsson and Rendall: 146) and that Mexican migration flows after 1981 may generate one additional working-age person for every four Americans in the retirement age by 2040. The open question remains whether European regions with long experience of low fertility can attract and accommodate migration streams necessary to achieve the relative stability in the size of their populations and labour force.

The importance of immigration for childbearing trends and population change in many European countries underlines the need to rethink the traditional concept of replacement-level fertility (Smallwood and Chamberlain 2005). Calot and Sardon (2001) suggest that the 'net replacement rates' which reflect both mortality and migration are preferable to the widely used 'net reproduction rates' and that the application of these measures may change the evaluation of future population prospects (see also Preston and Wang 2007 and Sobotka 2008). In addition, much research needs to be done on various effects of immigration that have an indirect influence on fertility. The Spain chapter outlines one such channel: it suggests that migration may reduce imbalances in the marriage market, and, through increased marriage rates and partnership formation, it may also have an additional positive effect on fertility. Another contribution on Spain (Roig Vila and Castro Martín 2007) proposes that immigrants in Spain also positively contribute to fertility by filling the domestic 'caring gap.' Their frequent employment in the care of children and the elderly partly substitutes inadequate childcare and social services and thus enables more Spanish women to have a child.

Finally, our knowledge about the impact of temporary and long-term emigration on fertility remains rudimentary at best. Three chapters that directly address this issue

(Albania, Lithuania and Slovakia chapters) suggest that temporary labour emigration, typical of these societies, has above all a disrupting effect on family formation, which contributes to the ongoing postponement of childbearing. Such disruption may be most pronounced when emigration streams are sex-specific, as was the case of Albania in the early 1990s: male-dominated emigration reduced women's exposure to pregnancy due to the lack of male partners staying in the country (see Albania chapter). The Lithuania chapter also points at other factors related to emigration: the destabilization of already created families, the weakening of ties between family members and adaptation to new trans-national lifestyles. The returning emigrants can be seen as conveyors of new ideas and behaviour related to family and fertility, which they adopted during their stay abroad (Fargues 2006). Such a reciprocal effect between circular migration and fertility in the country of origin constitutes an important area for further research.

9. Acknowledgements

Many thanks to Gunnar Andersson, Hill Kulu and four anonymous reviewers for their valuable comments on the previous draft of this article. The first version of this article was presented at the 4th International Conference of the EAPS working group on the "Second Demographic Transition" in Budapest, Hungary, 6-8 September 2007. Much of the work on this study was undertaken when the author was a guest researcher at the Max Planck Institute for Demographic Research in Rostock.

References

Abbasi-Shavazi, M. J., and P. McDonald. 2002. A comparison of fertility patterns of European immigrants in Australia with those in the countries of origin, *Genus* 58(1): 53–76.

Alders, M. 2000. *Cohort fertility of migrant women in the Netherlands*. Paper presented at the BSPS-NVD-URU Conference in Utrecht (the Netherlands), 31 August–1 September 2000.

Alders, M., N. Keilman, and H. Cruijsen. 2007. Assumptions for long-term stochastic population forecasts in 18 European countries, *European Journal of Population* 23(1): 33–69.

Alho, J., M. Alders, H. Cruijsen, N. Keilman, T. Nikander, and D. Q. Pham. 2006. New forecast: Population decline postponed in Europe, *Statistical Journal of the United Nations ECE* 23: 1–10.

Andersson, G. 2004. Childbearing after migration: fertility patterns of foreign-born women in Sweden, *International Migration Review* 38(2): 747–775.

Andersson, G., and K. Scott. 2005. Labour-market status and first-time parenthood: the experience of immigrant women in Sweden, 1981–97, *Population Studies* 59(1): 21–38.

Beaujot, R. 2003. *Effect of immigration on Canadian population: Replacement migration?* Discussion paper No. 03–03, London, Canada: University of Western Ontario. Population Studies Centre. http://sociology.uwo.ca/popstudies/dp/dp03-03.pdf.

Bijak, J., D. Kupiszewska, M. Kupiszewski, K. Saczuk, and A. Kicinger. 2007. Population and labour force projections for 27 countries, 2002–2052: impact of international migration on population ageing, *European Journal of Population* 23(1): 1–31.

Boeri, T., and H. Brücker. 2005. Why are Europeans so tough on migrants?, *Economic Policy* October 2005: 629–703.

Calot, G., and J.-P. Sardon. 2001. Fécondité, reproduction et replacement, *Population* 56(3): 337–396.

CBS. 2006. *CBS Statline*. Internet database of the Centraal Bureau voor de Statistiek (Statistics Netherlands). Voorburg. http://statline.cbs.nl.

Coale, A. C. 1988. Demographic effects of below-replacement fertility and their social implications, in K. Davis, M. S. Bernstam, and R. Ricardo-Campbell (Eds.) *Below-Replacement Fertility in Industrial Societies: Causes, Consequences, Policies*. Supplement to *Population and Development Review* 12,: 203–216.

Coleman, D. 2006. Immigration and ethnic change in low-fertility countries: a third demographic transition?, *Population and Development Review* 32(3): 401–446.

Coleman, D. 2003. Mass migration and population change, *Zeitschrift für Bevölkerungswissenschaft* 28 (2–4): 183–215.

Coleman, D. 1994. Trends in fertility and intermarriage among immigrant populations in Western Europe as measures of integration, *Journal of Biosocial Science* 26: 107–136.

Coleman, D., and R. Rowthorn. 2004. The economic effects of immigration into the United Kingdom, *Population and Development Review* 30(4): 579–624.

Coleman, D., P. Compton, and J. Salt. 2002. Demography of migrant populations: the case of the United Kingdom, in W. P. Haug, P. Compton and Y. Courbage (Eds.), *The Demographic Characteristics of Immigrant Populations.* Population Studies, No. 38, Strasbourg: Council of Europe Publishing, pp: 497–552.

Compton, P., and Y. Courbage. 2002. Synthesis report, in W. P. Haug, P. Compton, and Y. Courbage (Eds.), *The Demographic Characteristics of Immigrant Populations.* Population Studies, No. 38, Strasbourg: Council of Europe Publishing, pp: 553–592.

Council of Europe. 2006. *Recent Demographic Developments in Europe* 2005. Strasbourg: Council of Europe Publishing.

Dalla Zuanna, G. 2006. Population replacement, social mobility and development in Italy in the twentieth century, *Journal of Modern Italian Studies* 11(2): 188–208.

de Valk, H., and A. C. Liefbroer. 2007. Timing preferences for women's family-life transitions. Intergenerational transmission among migrants and the Dutch, *Journal of Marriage and Family* 69(1): 190–206.

Dumont, J.-C., and T. Liebig. 2005. *Labour market integration of immigrant women: overview and recent trends.* ROOM Document No. 3 prepared for the OECD and European Commission Seminar, Brussels, 26–27 September 2005. http://ec.europa.eu/employment_social/employment_analysis/imm/imm_migrwom05_dum_lieb_en.pdf.

Esposito, J. L. 1998. Population ethics: Islamic perspectives, in W. T. Reich (Ed.), *The Ethics of Sex and Genetics.* USA, New York: Macmillan Reference, pp: 510–515.

Eurostat. 2006a. *Population in Europe 2005: First results. Statistics in Focus.* Population and Social Conditions 16/2006. Luxembourg: European Communities. http://epp.eurostat.cec.eu.int/cache/ITY_OFFPUB/KS-NK-06-016/EN/KS-NK-06-016-EN.PDF.

Eurostat. 2006b. *Population statistics. 2006 edition.* Luxembourg: Office for Official Publications of European Communities.

Fargues, P. 2000. Protracted national conflict and fertility change among Palestinians and Israelis in the twentieth century, *Population and Development Review* 26(3): 441–482.

Fargues, P. 2006. *The demographic benefit of international migration: Hypothesis and application to Middle Eastern and North African contexts.* World Bank Policy Research Working Paper 4050, November 2006.

Feld, S. 2000. Active population growth and immigration hypotheses in Western Europe, *European Journal of Population* 16(1): 3–40.

Feld, S. 2005. Labor force trends and immigration in Europe, *International Migration Review* 39(3): 637–662.

Fokkema, T., de Valk, H., de Beer, J., van Duin, C. 2008. The Netherlands: Childbearing within the context of a "Poldermodel" society, *Demographic Research* 19(21). http://www.demographic-research.org/Volumes/Vol19/21/

Forste, R., and M. Tienda. What's behind racial and ethnic fertility differentials?, in J. B. Casterline, R. D. Lee and K. A. Foote (Eds.), *Fertility in the United States. New patterns, new theories.* Supplement to *Population and Development Review* 22, New York, Population Council, pp: 109–133.

Frank, R., and P. Heuveline. 2005. A crossover in Mexican and Mexican-American fertility rates: evidence and explanations for an emerging paradox, *Demographic Research* 12(4): 77–104. http://www.demographic-research.org/volumes/vol12/4/

Garssen, J., and H. Nicolaas. 2006. Recente trends in de vruchtbaarheid van niet-Westers allochtone vrouwen, *Bevolkingstrends* 01–2006: 15–31.

Gabrielli, G., A. Paterno, and S. Strozza. 2007. *Dynamics, characteristics, and demographic behaviour of immigrants in some south-European countries*. Paper presented at an international conference on "Migration and Development," Moscow 13–15 September 2007.

Genereux, A. 2007. *A review of migration and fertility theory through the lens of African immigrant fertility in France*. MPIDR Working Paper WP 2007-008, Rostock: Max Planck Institute for Demographic Research.

Haug, W., P. Compton, and Y. Courbage (Eds.). 2002. *The Demographic Characteristics of Immigrant Populations.* Population Studies, No. 38, Strasbourg: Council of Europe Publishing.

Heering, L., H. de Valk, E. Spaan, C. Huisman, and R. van der Erf. 2002. The demographic characteristics of immigrant populations in the Netherlands, in W. P. Haug, P. Compton, and Y. Courbage (Eds.), *The demographic Characteristics of Immigrant Populations.* Population Studies, No. 38, Strasbourg: Council of Europe Publishing, pp: 245–298.

Héran, F., and G. Pison. 2007. Two children per woman in France in 2006: are immigrants to blame?, *Population and Societies* 432 (March 2007). http://www.ined.fr/fichier/t_telechargement/7659/telechargement_fichier_en_publi_pdf2_pop.and.soc.english.432.pdf

Holzmann, R. 2005. *Demographic alternatives for aging industrial countries: Increased total fertility rate, labor force participation, or immigration*. IZA Discussion Paper No. 1885. Bonn: Institute for the Study of Labor.

Howe, N., and R. Jackson. 2005. *Projecting immigration. A survey of the current state of practice and theory.* A report of the CSIS Global Aging Initiative. Washington: CSIS. http://www.csis.org/media/csis/pubs/0504_howe_jacksonprojimmigration.pdf.

INE. 2006. *Vital Statistics 2005. Definitive data*. Madrid: Instituto National de Estadística. http://www.ine.es/inebase/cgi/um?M=%2Ft20%2Fe301&O=inebase&N=&L=1.

INE. 2007. *Movimiento natural de la población. Resultados provisionales 2006.* Madrid: Instituto National de Estadística. http://www.ine.es/inebase/cgi/um?M=%2Ft20%2Fe301%2Fprovi06&O=pcaxis&N=&L=1.

ISTAT. 2006, 2007. *Natalità e fecondità della popolazione residente: caratteristiche e tendenze recenti. Anno 2004* [2005]. Roma: Instituto nazionale di statistica. http://www.istat.it.

Jonsson, S. H., and M. S. Rendall. 2004. Fertility contribution of Mexican immigration to the United States, *Demography* 41(1): 129–150.

Kahn, J. R. 1994. Immigrant and native fertility during the 1980s: adaptation and expectations for the future, *International Migration Review* 38(3): 501–519.

Kulu, H. 2005. Migration and fertility: Competing hypotheses re-examined, *European Journal of Population* 21(1): 51–87.

Kytir, J. 2006. Demographische Strukturen und Trends 2005, *Statistische Nachrichten* 2006(9): 777–790.

Lappegård, T. 2000. *Mellom to kulturer Fruktbarhetsmønstre blant innvandrerkvinner i Norge.* Reports 2000/25, Oslo: Statistics Norway. http://www.ssb.no/emner/02/02/10/rapp_200025/.

Lutz, W., and S. Scherbov. 2003. Can immigration compensate for Europe's low fertility? European Demographic Research Papers 1 (2003), Vienna: Vienna Institute of Demography.

McQuillan, K. 2004. When does religion influence fertility?, *Population and Development Review* 30(1): 25–56.

Milewski, N. 2007. *First child of immigrant workers and their descendants in West Germany: interrelation of events, disruption, or adaptation? Demographic Research* 17(29): 859-896. http://www.demographic-research.org.

OECD. 2007. *International Migration Outlook.* Paris: OECD (SOPEMI).

ONS. 2006. *Birth statistics. Review of the Registrar General on births and patterns of family building England and Wales, 2005*. Series FM1, No. 34. London Office of National Statistics. http://www.statistics.gov.uk/downloads/theme_population/FM1_34/FM1_no34_2005.pdf

ONS. 2007. *Fertility rate is highest for 26 years*. News release, 7 June 2007. London: Office of National Statistics http://www.statistics.gov.uk/pdfdir/frc0607.pdf.

Østby, L. 2002. *The demographic characteristics of immigrant populations in Norway.* Reports 2002/22, Oslo: Statistics Norway.

Penn, R., and P. Lambert. 2002. Attitudes towards ideal family size of different ethnic/nationality groups in Great Britain, France and Germany, *Population Trends* 108: 49–58.

Poulain, M., and N. Perrin. 2002. The demographic characteristics of immigrant populations in the Belgium, in W. Haug, P. Compton, and Y. Courbage (Eds.), *The Demographic Characteristics of Immigrant Populations.* Population Studies, No. 38, Strasbourg: Council of Europe Publishing, pp: 57–130.

Preston, S., and H. Wang. 2007. Intrinsic growth rates and net reproduction rates in the presence of migration. *Population and Development Review* 33(4): 657-666.

Prioux, F. 2005. Recent demographic developments in France, *Population-E* 60(4): 371–414.

Roig Vila, M., and T. Castro Martín. 2007.Childbearing patterns of foreign women in a new immigration country: The case of Spain. *Population-E* 62(3): 351-380..

Schoorl, J. 1995. Fertility trends of immigrant populations, in S. Voets, J. Schoorl and B. de Bruijn (Eds.), *The Demographic Consequences of International Migration.* Proceedings of the symposium, NIAS, Wasenaar, 27–29 September 1990. Report No. 44, The Hague: NIDI, pp: 97–121.

SFSO. 2006. *Statistique du mouvement naturel de la population. Résultats définitifs 2005.* Neuchâtel: Swiss Federal Statistical Office. http://www.bfs.admin.ch/.

Shaw, C. 2007. Fifty years of United Kingdom national population projections: how accurate have they been?, *Population Trends* 128: 8–23.

Smallwood, S., and J. Chamberlain. 2005. Replacement fertility, what has it been and what does it mean?, P*opulation Trends* 119): 16–27.

Sobotka, T. 2008. Does persistent low fertility threaten the future of European populations?, Forthcoming in J. Surkyn, J. van Bavel and P. Deboosere (Eds.), *Demographic Challenges for the 21st Century. A State of Art in Demography.* Brussels; VUBPRESS, pp. 27-89.

Statistics Denmark. 2004. *Befolkningens bevægelser 2003. Vital statistics 2003.* Copenhagen: Danmarks Statistik.

Statistics Sweden. 2006. *Tabeller över Sveriges befolkning.* Statistiska centralbyrån Stockholm: Statistics Sweden.

Statistisches Bundesamt. 2006. *Statistisches Jahrbuch 2006.* Wiesbaden: Statistisches Bundesamt. http://www.destatis.de/jahrbuch/jahrbuch2006_downloads.htm.

Toulemon, L. 2004. Fertility among immigrant women: new data, new approach, *Population & Societies* 400 (April 2004): 1-4.

Toulemon, L., and M. Mazuy. 2004. *Comment prendre en compte l'âge à l'arrivée et la durée de séjour en France dans la mesure de la fécondité des immigrants?* Documents de travail 120, 2004, Paris: INED.

Tribalat, M. 2005. Fécondité des immigrées et apport démographique de l'immigration étrangère, in C. Bargouignan *et al.* (Eds.), *La population de la France. Évolutions démographiques depuis 1946. Vol. II.* CUDEP / IEDUB, Bordeaux, pp: 727–767.

UN. 2000. *Replacement migration. Is it a solution to declining and ageing populations?* New York: United Nations. http://www.un.org/esa/population/publications/migration/migration.htm.

Van Bavel, J., and V. Bastiaenssen. 2006. *De evolutie van de vruchtbaarheid in het Vlaamse Gewest tussen 2001 en 2005.* Interface Demography Working Paper 2006-1 Brussels: Vrije Universiteit Brussel.

VAZG. 2007. *Tables on births in Flanders provided by the Flemish Healthcare Agency.* (Vlaams Agentschap Zorg en Gezondheit); http://www.zorg-en-gezondheid.be/topPage.aspx?id=684.

Wanner, P. 2002. The demographic characteristics of immigrant populations in Switzerland, in W. Haug, P. Compton, and Y. Courbage (Eds.) *The Demographic Characteristics of Immigrant Populations.* Population Studies, No. 38, Strasbourg: Council of Europe Publishing, pp: 419–496.