

Fertility Among Immigrant Women in France: New Data, a New Approach

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Abstract

The comparison between fertility of immigrants and “natives” is often based on the total fertility rate (TFR). But migration marks an important change in family and fertility behavior. Though immigrants' fertility before migration is low, migration is often linked with union formation, and fertility rates just after immigration are very high. The TFR does not take this discontinuity into account, and thus overestimates lifetime fertility of immigrants. Using a one-percent survey, part of the French 1999 Census, we first present fertility of men and women by age and duration since migration. We then propose a new method of estimating total fertility, taking fertility both before and after migration into account. Using this method, the estimated excess fertility of immigrants compared with women born in France is 0.46 children per women during the 1990s (2.16 vs. 1.70), while the usual TFR leads to an apparent difference of 0.85.

Introduction

Comparing the fertility of immigrants and “natives” is easy when the populations concerned have ended their reproductive period. To obtain more recent data, period indexes of fertility are necessary. The comparison is often based on the total fertility rate (TFR), the sum of age-specific fertility rates. This measure assumes that age groups are homogeneous, which is certainly not the case for immigrants. We first describe fertility not only by age, but also by duration since migration. As migration marks a major discontinuity in fertility, we propose a new method which takes this discontinuity into account in order to obtain an unbiased comparison. The difference between immigrants and natives appears to be lower than stated before, especially for women.¹

1. The usual methods used to estimate total fertility

Two methods are used to estimate immigrants’ fertility: the Civil registration method and the own children method. In the civil registration method, the number of births is obtained from the registration data, while the number of women is estimated from the census. At each age, the ratio of births to women gives the age-specific fertility rate. In the own children method, all data come from the census, and the number of children born to a woman in the years before the census is estimated from the number of young children living in the same household (Desplanques 1994).

These methods are often used to estimate the fertility of foreigners, who are easily identified in the census data as well as in civil birth registration data. But being a foreigner is a transient state: foreigners are people who are already living in France but who are not (already) of French nationality... and who have not left France. In the own children method, the children may be born in France or elsewhere, while the civil registration method only includes births which took place in France.

But the main shortcoming of these two methods is that they are both based on age-specific fertility rates, without allowing for age at entry into France. This limitation introduces a severe bias in the estimation of immigrants’ total fertility, for two reasons. First, all migrants do not enter into France at a very young age, and fertility *before* migration must be taken into account, as well as fertility after migration, if we want to estimate all life-long fertility. Second, if duration since entry in France is of major importance for fertility, age groups are not homogenous and the synthetic cohort may not be built only with age. Duration since entry in France must be taken into account.

The dataset, coming from the 1999 Family History Survey will first be briefly presented in part 2, as well as preliminary results on immigrants’ total fertility, according to usual definitions. Then part 3 will describe how fertility changes with duration of sojourn in France and age at entry in France. A simple simulation (part 4) will show how these variations of fertility with duration introduces a bias in the usual total fertility rate, and the magnitude of the bias.

A new method of estimation of total fertility, based on age and duration and including fertility before migration as well as after migration, will then be presented in part 5. Finally, some results will be presented in part 6.

¹ This paper is based on two previous works: a working paper that has been published as a book chapter on the method (Toulemon, Mazuy 2004 and 2005) and a short paper published in French and English (Toulemon 2004).

2. Data and first results

Data

The Study of Family History survey was conducted within the 1999 General Population Census. A one-percent sample of adults (380,000 men and women aged 18 or above) filled in a specific form on their fertility (including stepchildren and adopted children), their union history (with or without marriage) and the languages they received from their parents and transmitted to their children (Cassan, Héran and Toulemon 2000, Lefèvre and Filhon 2005). Available data include country of birth, nationality at birth, date of entry into France, and date of birth of all children, for 235,000 women and 145,000 men.

A total of 14,000 men and 23,000 women born outside France (between 500 and 800 by birth cohort) participated in the survey. The information on date of entry into France can be used to study male and female fertility before and after migration².

First results on immigrants' fertility: cohort results

We consider as "immigrants" all men and women born out of continental France, including French nationals born abroad or in the overseas *departments*, and still present in continental France in 1999, when the survey took place. The census only includes one date of entry in France, so we neglect any other in- and out- migration³. Natives are people born in continental France.

At the age of 45, immigrants' fertility is higher than natives' fertility: the differences reaches 0.59 for women born in 1948-52 (table 1). As all immigrants did not enter in France before the age of 15, some of their children were born before migration: immigrant women already had 0.83 and 0.61 child when they entered into France; their fertility after migration is very close to the completed fertility of natives (2.09 as against 2.12 for women born in 1943-47, 1.99 and 2.01 for women born in 1948-52). The number of children born before the entry in France is lower than for immigrant women.

Table 1. Cohort fertility at the age of 45, by place of birth. Men and women born in 1948-52

	All	Born in France	Immigrants			Difference (Imm-Born)
			Total	Before	After	
Men	2,06	1,95	2,60	0,37	2,23	0,65
Women	2,09	2,01	2,60	0,61	1,99	0,59

These cohorts, aged between 46 and 55 years of age at the beginning of 1999, had their children in the late seventies or in the eighties. Younger cohorts exhibit lower differences, but they are still in the fertility ages. In order to study current trends, it is thus necessary to estimate their period fertility.

Age-specific fertility rates may be estimated from the civil registration method, from the retrospective information included in the FHS survey: from each respondent we estimated the number of person-years and the number of births for any period of time. Table 2 presents the results for the period 1991-98 as a whole. According to this estimate, the difference between immigrants and natives was still large in the nineties: immigrant women seemed to have more than 0.7 additional children, compared to natives, and the difference reached 0.80 for men.

² The dataset is extensively presented at <http://www-ehf.ined.fr>. It is available for research. The interested readers may contact the author at toulemon@ined.fr.

³ Missing data on date of entry into France were imputed with a hot-deck by country of birth, sex and age,

Part of this difference may be due to the fact that male fertility is underestimated from the FHS survey, as some men may not refer to all their children, being reluctant to indicate in the form that they have some children that they do not take care of, or even never meet. In all, 6% of children are not referred to in the male sample (Toulemon, Mazuy 2003). It is likely that this underestimation of children is larger among men born in France than among immigrants, leading to an overestimation of the difference between male immigrants and natives fertility.

Table 2. Period fertility before the age of 45, by place of birth and sex. Period 1991-98

	All	Natives	Immigrants	Difference
Men	1,62	1,52	2,32	0,80
Women	1,72	1,65	2,37	0,72

Let us now examine in more detail immigrants' fertility, before and after their entry in France.

3. Immigrants' fertility before and after entry into France

A first model with age and duration of stay in France

Figures 1 and 2 present the relative fertility of women and men immigrants, compared with people born in France, controlling for age and period, all variables being categorical. For each sex, a simple logistic model is used to estimate fertility probability during each year, depending on place of birth, age and period. Period variable runs from 1945 to 1998, with a five-year grouping, the last category being 1995-98. For place of birth, "continental France" is the reference group and people born elsewhere are considered as immigrants. Fertility is estimated for women aged between 15 and 49 and for men aged between 15 and 59. Duration 0 indicates the year of entry in France. The duration variable is grouped for durations far from migration (more than 9 years before or after migration). Age is estimated as the difference between date of birth and period considered, not grouped. Because of an interaction between period and duration since entry into France, two separate models were run for the two periods 1945-74 and 1975-98.

In figures 1 and 2, the relative risks are smoothed from durations -9 to -1 and +1 to +9, to make the results more clearly visible. Female fertility is very high just after entry in France: the odds ratio is higher than 2.5 for women who are in France since one year; the effect is larger after 1974 than before. For longer durations, the odds ratio declines regularly to 1.0, indicating that immigrants' fertility becomes more and more similar to natives' fertility as far as immigrants stay in France for a longer period.

The effect is different for men: the increase is more progressive after migration, but it is still strong at long durations, between 10 and 15 years of residence in France. The explanation for this difference is that entry into France is more frequently linked to entry into union for women than for men. The latter must accumulate some capital before being able to enter a union and have children, while women more often come to France in order to enter a union.

For men as well as for women, excess fertility appears to be higher in the recent period, because French overall fertility levels (similar to those of the reference group of people born in France) are lower in the latter period.

Before migration, immigrants' fertility, for both men and women, is very similar to that of people born in France (relative risk near 1). This result may look paradoxical: immigrants often come from countries where fertility is higher than in France, but their fertility is similar to French natives fertility before their migration and higher after the entry in France.

Figure 1. Female immigrants' fertility, relative to women born in France, controlled for age and period

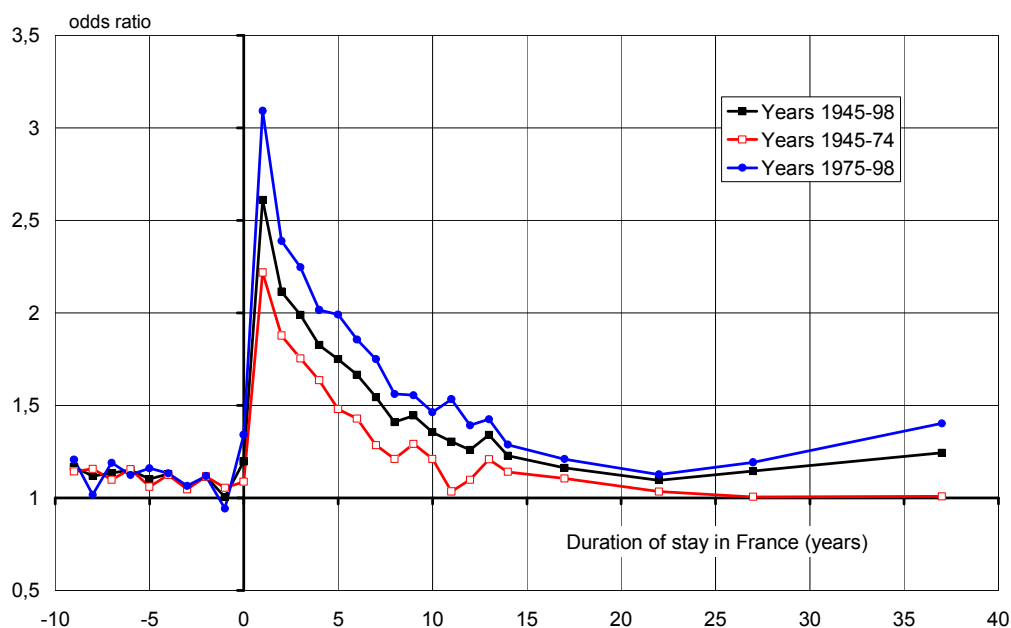
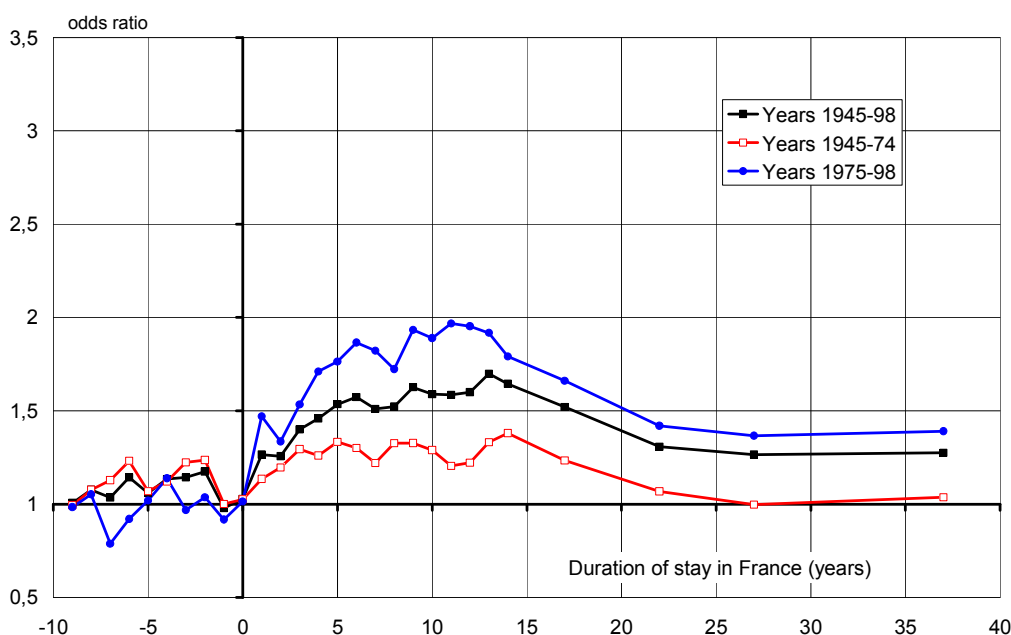


Figure 2. Male immigrants' fertility, relative to women born in France, controlled for age and period



Three reasons may explain that immigrants' fertility before migration is relatively low. First, immigration may select people who are attracted by new horizons and not wanting to reproduce their family habits (selection hypothesis); second, being a parent may limit the possibilities of migration, leading some fathers and mothers to give up their project of migration (reverse causality); third potential immigrants may anticipate their migration, and then voluntary delay their union formation and their fertility (anticipation).

Then, after migration, immigrants may catch-up for their delayed fertility. Their lifelong fertility thus exhibits a strong discontinuity, the period after migration being associated with a higher fertility; this discontinuity is larger for women. Is it similar for all ages at entry?

A model taking into account the interaction between age (or duration of stay in France) and age at entry in France

To answer this question we must introduce an interaction between age and age at entry in France. A simple model may not include at the same time age, age at entry and duration of stay, the latter being the simple difference between the two first covariates. Then, homogenous groups of immigrants were built using age at entry, and one specific model was run to compare each group of immigrants with the natives. For simplicity, these models were run only for the period 1975-1998.

For each sex and each group of ages at entry, namely (0-4; 5-13; 14-19; 20-22; 23-25; 26-30; 31-35 and 36+), a model was run including this group and the natives, in order to see the contrasts in fertility. Two covariates were used in each model: period (5-year dummies), and age. Age is transformed in order to identify at best the discontinuity associated with the migration: for each group, age is replaced by a “fuzzy age” equal to the median age at entry in France among the group, added with duration of stay, minus age. For example, immigrants who came at age 20-22 are supposed to have come at age 21; among this group, age is increased by one for immigrants who actually came in France at age 20, decreased by one for those who came at age 22, and unchanged for those who came at age 21. Thus, fertility rate at “fuzzy age” 21 corresponds for the year of arrival in France, for all immigrants of this group. The changes in fertility with duration of stay is then easy to observe. In order to show the interaction between duration and age at entry, log-odds ratios are presented in the following figures.

The excess fertility just after migration already shown in Figures 1 and 2 is higher for women who came into France at a later age, while immigrants who came before the age of 13 have an overall fertility similar to people born in France. Women who came before the age of 23, the excess fertility is very high just after migration, decreases with duration after the entry in France, and then increases again at very long durations, say more than 10 years of sojourn (Figure 3); women who came at a later age exhibit a discontinuity without any apparent decrease with duration. The anticipation effect, with a very low fertility in the years just before migration, is most visible among women who came at ages 23-25 or 26-30 (Figure 4).

This complex interaction pattern is due to a combination of a duration and an age effects: the excess fertility is stronger at short positive duration, and lower at medium ages (Figure 5). The pattern becomes much simpler when an additive model is built, namely when the difference between the rates (and not the odds ratios) are described (Figure 6). Women who came in France before the age of 15 exhibit no major difference with natives, except at higher ages (35 and over), indicating that their completed fertility may be a little higher, without any direct relation with the migration itself. For these women who came in France as children, country of birth is an indicator of social and cultural origin, but the migration in itself is not directly related to fertility.

This higher fertility just after migration is a common feature of migrants' fertility. See eg. Andersson 2004.

Figure 3. Female immigrants' fertility, relative to women born in France, by duration of stay in France and age at entry. France, 1975-98, women who came before the age of 23.

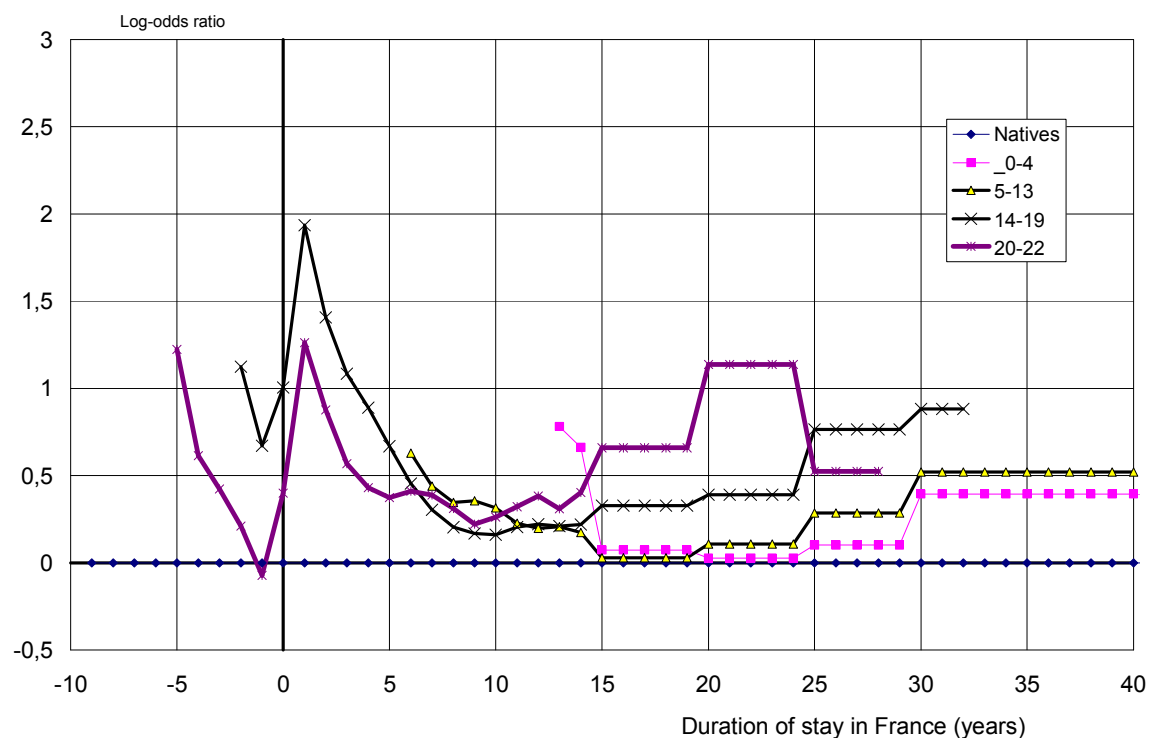


Figure 4. Female immigrants' fertility, relative to women born in France, by duration of stay in France and age at entry. France, 1975-98, women who came at age 23 or more.

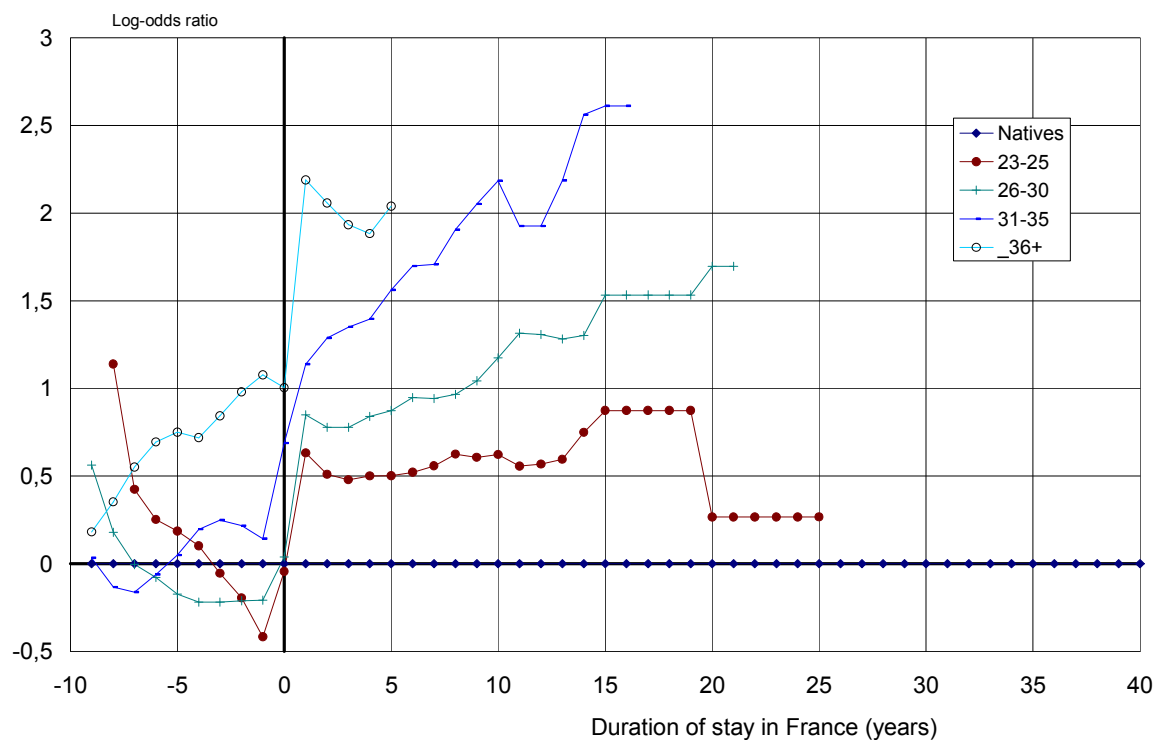


Figure 5. Female immigrants' fertility, relative to women born in France, by age and age at entry. France, 1975-98. Log-odds ratios

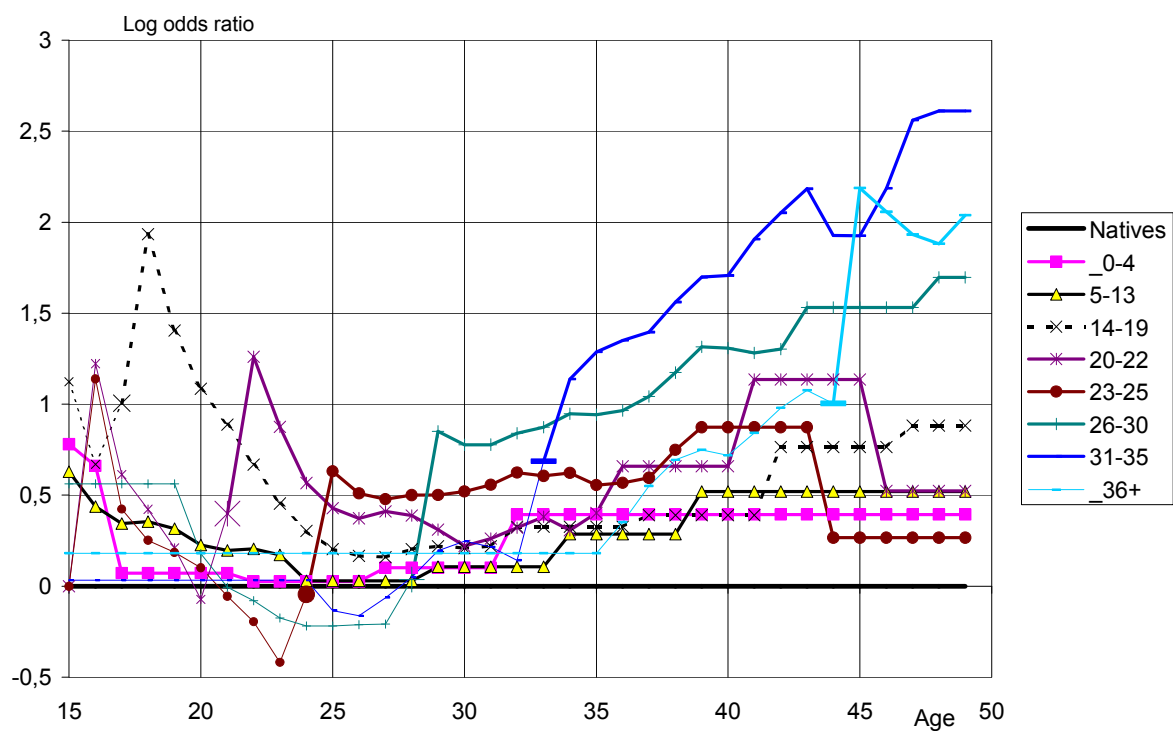


Figure 6. Female immigrants' fertility, relative to women born in France, by age and age at entry. France, 1975-98. Absolute difference in fertility rates

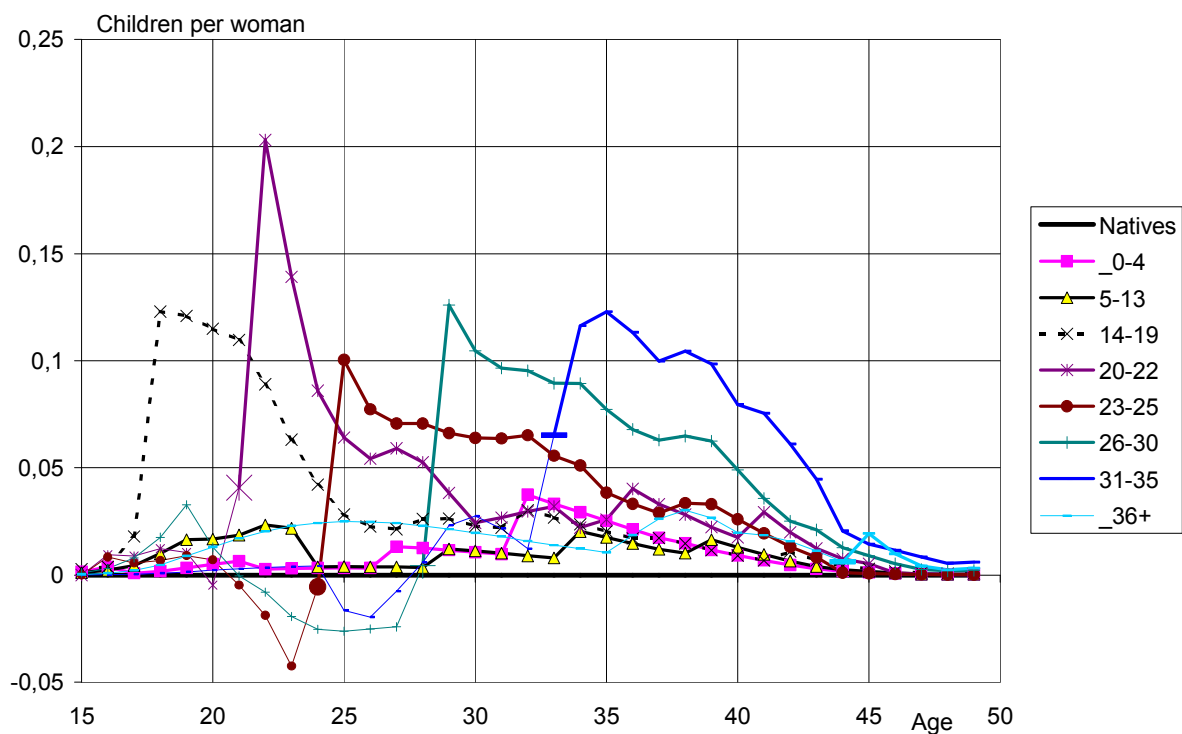


Figure 7. Female immigrants' fertility, and fertility of women born in France (natives), by age and age at entry. France, 1975-98.

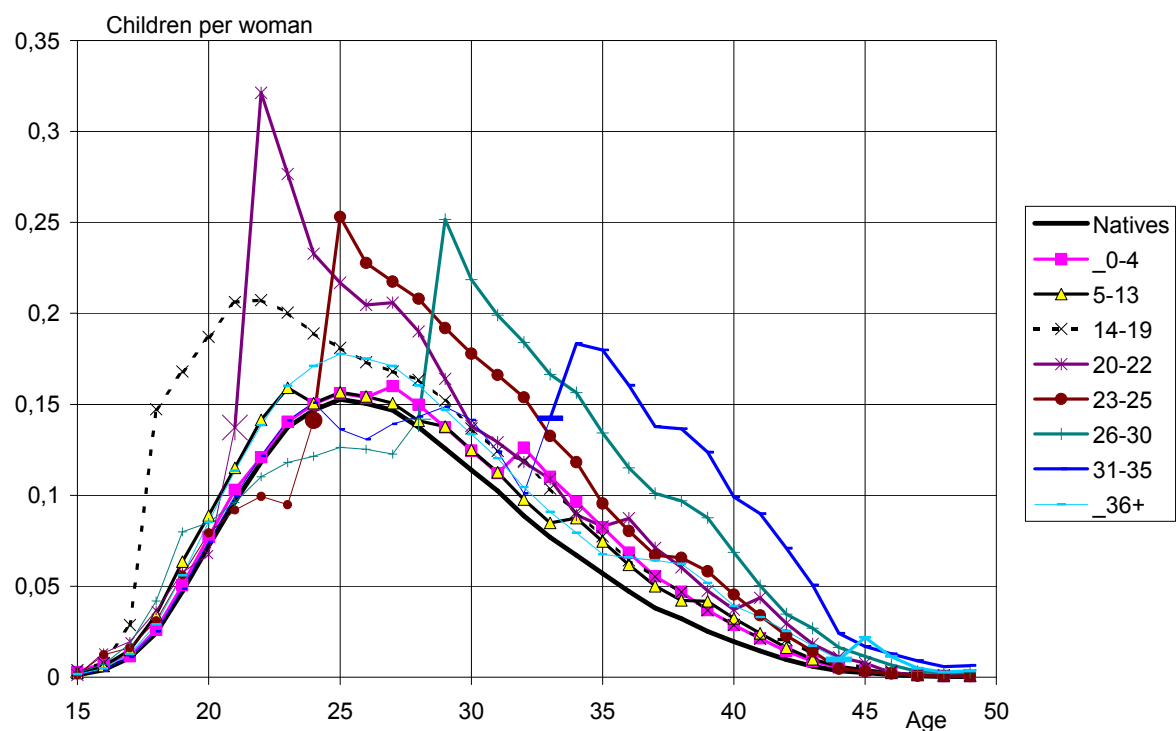
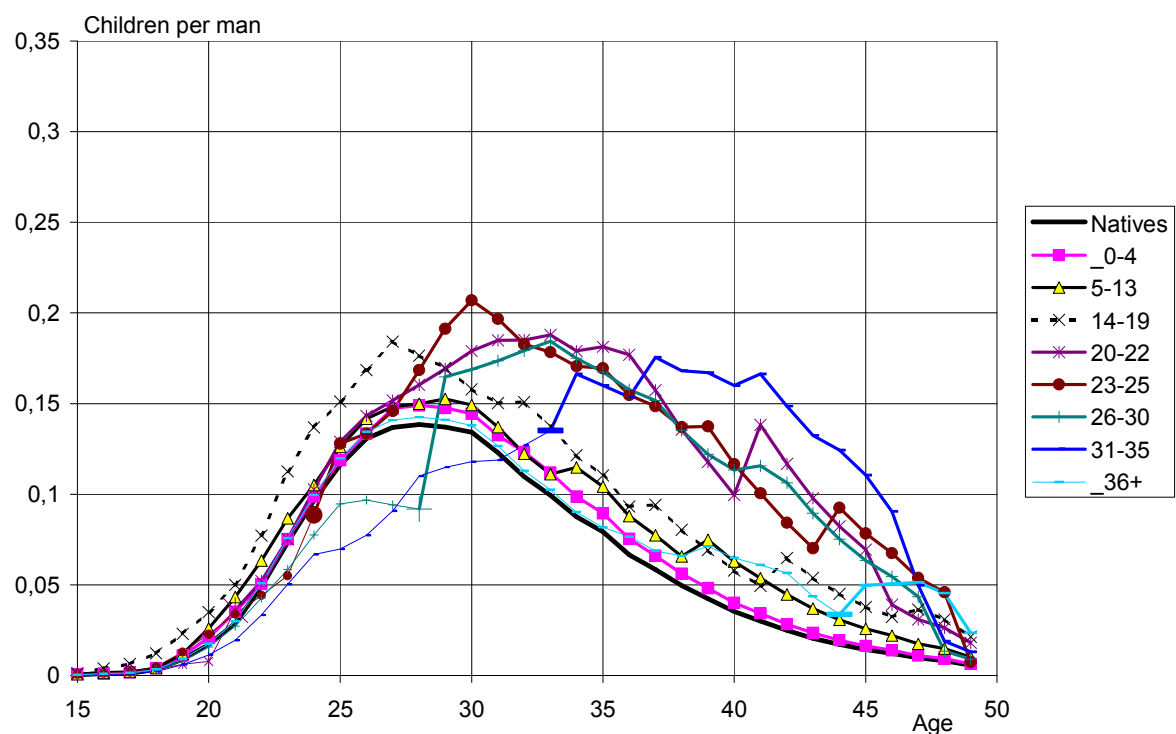


Figure 8. Male immigrants' fertility, and fertility of men born in France (natives), by age and age at entry. France, 1975-98.



Among women who came at fertility ages, fertility is high just after migration, higher than natives' fertility, with a difference reaching around 0.1 child per woman per year, except for women who came at age 20-22, who exhibit a larger difference (0.2). Then the excess fertility decreases with duration of stay, the decline being stronger for women who came in France before the age of 23.

Finally, Figure 7 presents the fertility of immigrant women, as well as natives' fertility, during the years 1975-98. Before migration, immigrants' fertility is close to natives' fertility, a little lower at ages 22-30; just after entry in France, there is a strong discontinuity, which almost vanishes with duration of sojourn in France. For immigrant men, the discontinuity is less concentrated at short duration: the increase in excess fertility is still observed at longer durations (figure 2).

A model which does not take age at entry into account, such as the one implicit in the sum of age-specific fertility rates, can therefore be highly misleading. A simulation model will allow to guess the magnitude of the bias.

4. A simulation model

Let us imagine a group of immigrants whose fertility is the same than the natives', except for durations 0 to 5 included, irrespective of the age at entry (figure 9). Their total fertility is then equal to natives' fertility plus an excess fertility of 0.6 child per woman. Immigrants who came before the age of 15 are supposed to have the same fertility than the natives (a difference of 0.0 child per woman).

Let us now make a first assumption, where ages at entry are uniformly spread among ages 15 to 39. At ages 15 to 20, all immigrants are in the country for 5 years or less, and the mean fertility of immigrants is 0.1 higher than natives' fertility. At ages x equal to 21 or more, some immigrants are in the country for more than 5 years, and then exhibit the same fertility as the natives. The last 6 cohorts of immigrants have a higher fertility, and the mean excess fertility is then equal to $0.1 \cdot 6 / (x - 14)$ (Figure 10). The total fertility of these immigrants, computed as the sum of age fertility, is higher than the natives' fertility by no less than 1.48 children per woman, where the "real difference" would be 0.6.

Under a second assumption where some immigrants came before the age of 15, without any excess fertility, the bias in excess fertility is much lower. Let us for instance assume that immigrants come at ages 7 to 39, with a uniform distribution of ages at entry. Immigrants who came before the age of 15 exhibit no excess fertility; at age 15 one cohort has higher fertility, and the other eight cohorts (who came at ages 7 to 14) do not. The mean excess fertility is thus equal to $0.1 / (9)$. The excess fertility is maximum at age 20 [$0.1 \cdot 6 / (6 + 8)$] and then decreases with age x after 20, being equal to $0.1 \cdot 6 / (x - 6)$. This second simulation, which is based on hypotheses close to the actual behavior of female immigrants in France, leads to a difference in total fertility (sum of age specific fertility rates) of 0.72, higher than the "real" excess fertility of immigrants, equal to $0.6 \cdot 25 / 33 = 0.45$.

It may be noticed that the excess fertility under the second hypothesis is higher at intermediate ages, leading to the false idea that the excess fertility could be proportional to natives' fertility. Sensitivity analyses (not shown) indicate that the relative bias in the excess fertility is larger when the discontinuity is concentrated at short durations, and smaller when some immigrants are present at young ages, without any excess fertility.

We will now examine a new method to produce a synthetic index of immigrants' total fertility that is not biased in the case when migrations take place at different ages and excess fertility is concentrated at short durations after entry in France.

Figure 9. Simulated excess fertility of immigrants, compared to natives' fertility, by age, for some ages at entry. Immigrants who come at ages 15 or more exhibit a 0.1 child per woman per year higher fertility at durations 0 to 5.

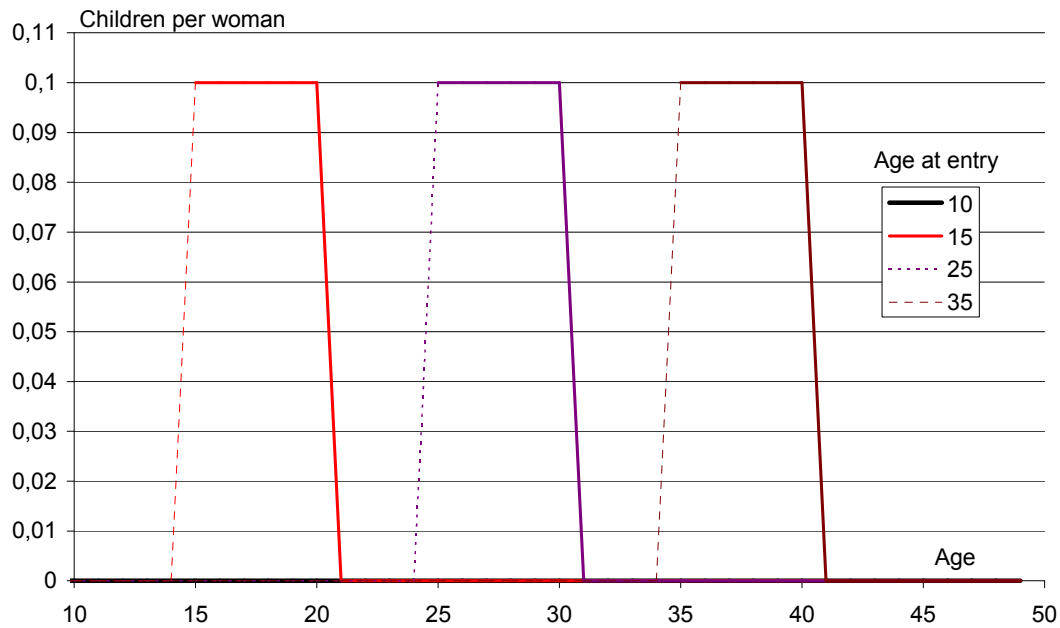
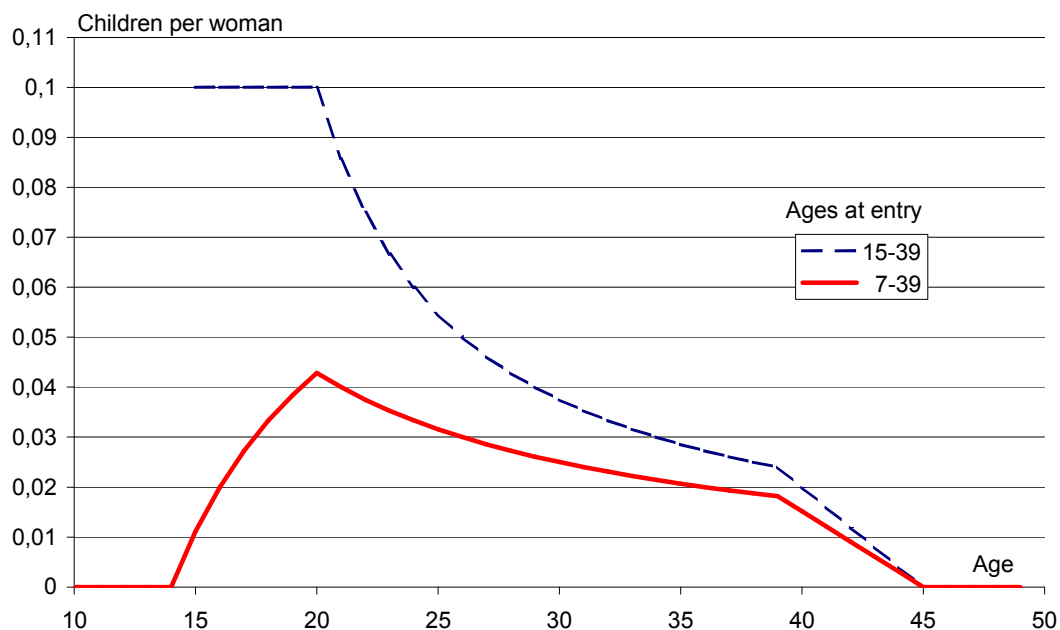


Figure 10. Simulated mean excess fertility of immigrants, under the assumption of immigration at ages 15 to 39, or at ages 9 to 39. Immigrants who come at ages 15 or more exhibit a 0.1 child per woman per year higher fertility at durations 0 to 5.



5. A new synthetic index of total fertility

Fertility before and after migration

The basic idea of the method is to estimate total fertility of immigrants who came into France at age x as the sum of the partial fertility $CF(x-)$ up to age x before migration (parity at entry

Figure 11. Lexis diagram of fertility rates used in the new method

The figure consists of two side-by-side graphs. Both graphs have 'Age' on the vertical axis and 'time' on the horizontal axis.

The left graph shows a red line (representing $CF(x_-)$) and a blue line (representing $PF(x_+)$). The red line starts at the origin and passes through points (t_1, x_1) , (t, x) , and (t_2, x_2) . The blue line is vertical at time t , passing through (t, x) . A dashed red line is also shown, starting from the origin and passing through (t_2, x_2) .

The right graph shows multiple parallel lines. The red lines (representing $CF(x_-)$) are dotted and start at $(t-x_3+x, x)$, $(t-x, x_1)$, and (t, x_2) . The blue lines (representing $PF(x_+)$) are solid and end at (t, x) , (t, x_1) , and (t, x_2) . A legend in the bottom right corner indicates that a solid blue line represents $PF(x_+)$ and a dotted red line represents $CF(x_-)$.

In the rest of the paper detailed analysis will be limited to women, for whom the bias is the largest, but the main results will be presented for both sexes.

The graph displays the fertility rate (children per woman) as a function of the age at entry into the host country. The y-axis ranges from 0 to 3.5, and the x-axis ranges from 0 to 50. Two series are plotted: 'Immigrants_before' (red line with 'x' markers) and 'Natives_before' (blue line). Both series show a sharp increase in fertility starting around age 20, peaking between ages 45 and 47, and then declining. The immigrant fertility rate is consistently higher than the native fertility rate across the entire age range shown.

Age at entry	Immigrants_before	Natives_before
0	0.00	0.00
5	0.00	0.00
10	0.00	0.00
15	0.00	0.00
20	0.05	0.05
25	0.30	0.30
30	0.80	0.80
35	1.40	1.40
40	2.10	1.90
45	2.40	2.00
50	2.10	2.10

The partial cohort fertility before age x (Figure 12) is lower for immigrant women than for natives at all ages before 36: immigrants who entered in France in 1991-98 had less children, when they came in France, than women of the same age born in France.

The period fertility after age x , presented in Figure 13, presents the number of children to be born to immigrants who came in 1991-98, under the assumption that the fertility rates by age and age at entry would remain stable, as they are estimated for the fertility in 1991-98 of immigrants who came at age x in a period of time before 1991-98. For the natives, the partial period fertility is simply the sum of age-specific fertility at ages x and above. Fertility after migration is slightly higher for immigrants who came before the age of 15 than for the natives, and the difference is maximum for migrants who came near age 20.

Adding cohort fertility before migration and period fertility for ages after migration gives an estimate of lifelong fertility of immigrants, as well as a level of fertility directly comparable for the natives. Figure 14 merges figures 12 and 13, and Figure 15 exhibits the difference between immigrants' and natives' fertility, taking into account ages before as well as after migration.

Figure 13. Children to be born after the entry $PF(x+)$, estimated as the sum of age- and age-at-entry-specific fertility rates for immigrant women. France, years 1991-98

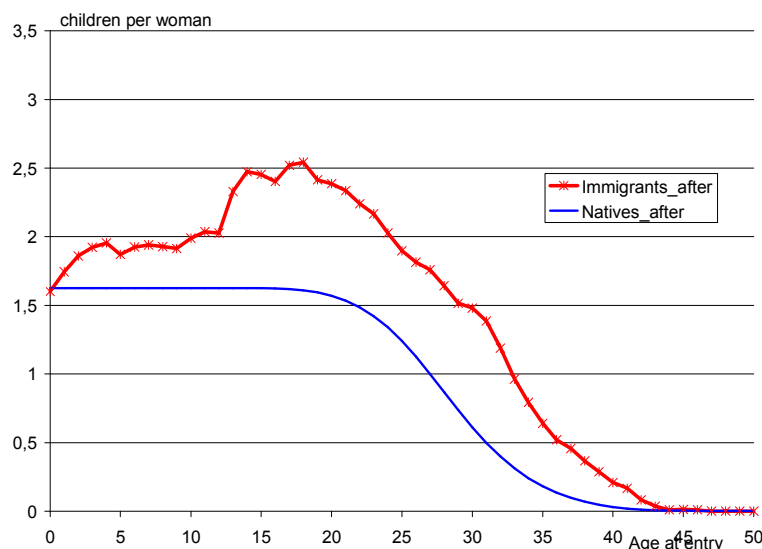


Figure 14. Children born before entry in France $CF(x-)$ and children to be born after the entry $PF(x+)$, for immigrants, and comparable estimates for natives. France, years 1991-98

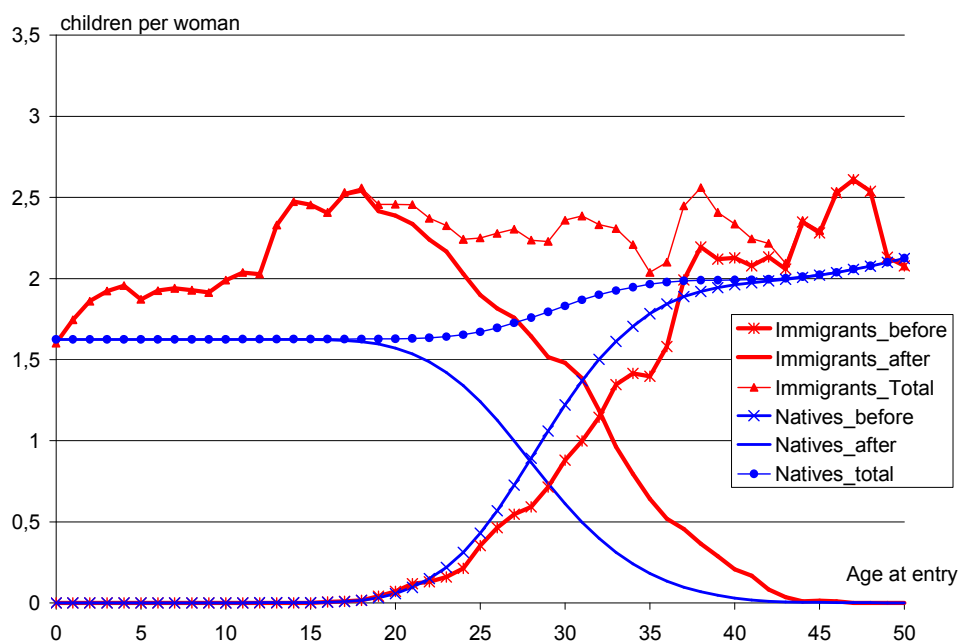
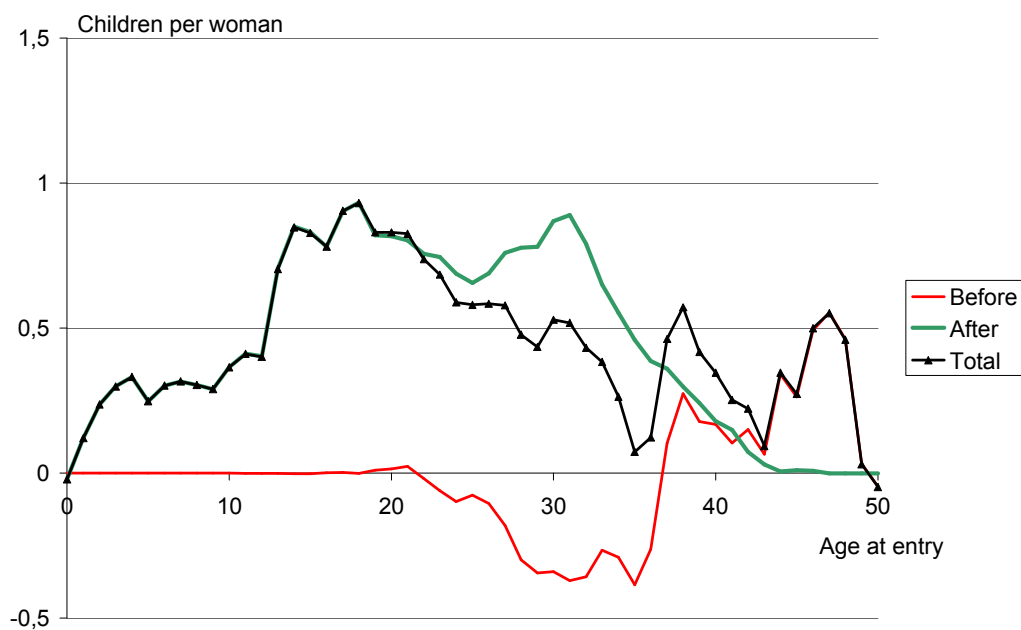


Figure 15. Difference between immigrant women's and natives' fertility, by age at entry. France, years 1991-98



At young ages, fertility before emigration is null, and the difference between immigrants and natives is entirely due to fertility after migration. Up to age 20, immigrants come in France with a very low fertility, as low as natives' fertility (Figure 15). Women who came in France before the age of 13 do not have a total fertility much higher than natives: the difference is around 0.3 child per woman. For women who came at 13 or more, the difference is almost double, and reaches 0.8. For immigrant women who enter in France after the age of 20, fertility after migration is still much higher than for natives, but immigrants' fertility before migration is lower, and the total difference between immigrants and natives decreases with age at entry.

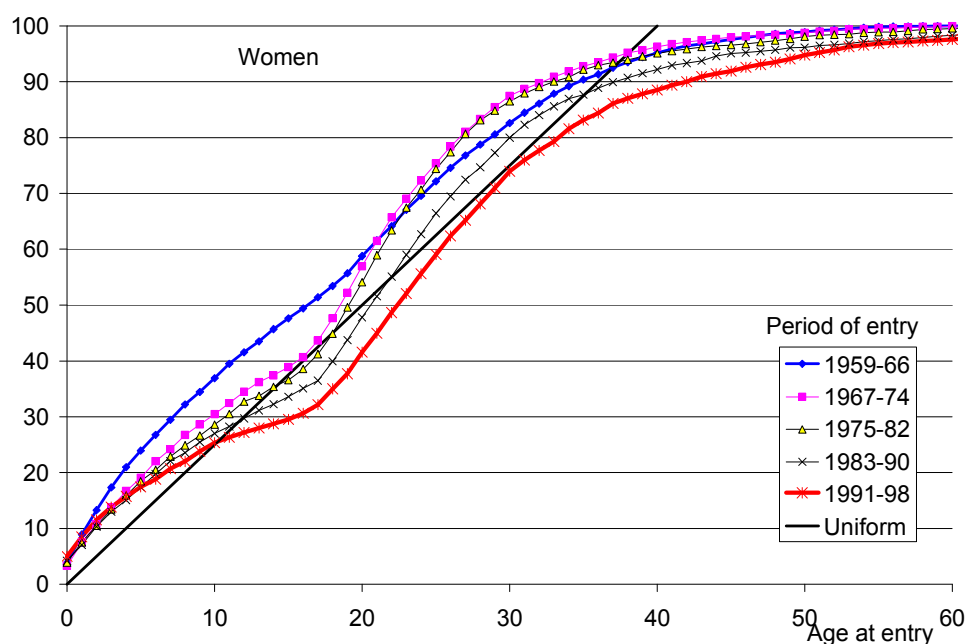
At all ages, the difference between immigrants' and natives' fertility is stronger for men than for women (see appendix).

Weighting these differences by the structure of immigrants by age at entry

The last step toward a new synthetic index implies to weight these difference by a distribution of ages at entry. It seems logical to use the actual structure by age at entry of current immigrants, for each period under consideration.

During the years 1991-98, the distribution of immigrant women is not far from a uniform distribution among ages 0-40. The median age is 22.5, the first and third quartiles are 10 and 30 respectively (Figure 16). For previous periods, immigrants seem to have come at younger ages, but it could be due to the fact that out-migration (as a return migration to the country of birth or as an other migration) is more frequent among immigrants who came at an older age. Due to the biases introduced by the retrospective nature of the survey, the indexes are computed for the last 40 years, periods are grouped into 8-year groups, from 1959-66 to 1991-98.

Figure 16. Age structure of new immigrant women by age at entry
France, years 1991-98



Weighting the fertility differences by the actual structure of immigrants by age at entry, for each period, gives the synthetic indexes of fertility for immigrant men and women, as well as their counterpart for natives (Figure 17).

Immigrants' fertility in France, 1959-98

As immigrants are young when they come in France, most of their children are born in France. For immigrant women, the fertility after migration is declining very regularly.

The difference between immigrants' and natives' fertility is presented in figure 18. During the sixties and seventies, both immigrants' and natives' fertility declined, but the decline was larger for natives (the end of the baby boom) and the difference between immigrants and natives did increase. Among the eighties and nineties, at the contrary, fertility remained stable in France, while the decrease went on for immigrants, leading to a decline of the difference between immigrants and natives.

Figure 17. A synthetic index of immigrants' fertility, before and after their entry in France, and comparable fertility for natives, by period (eight-year groups) and sex

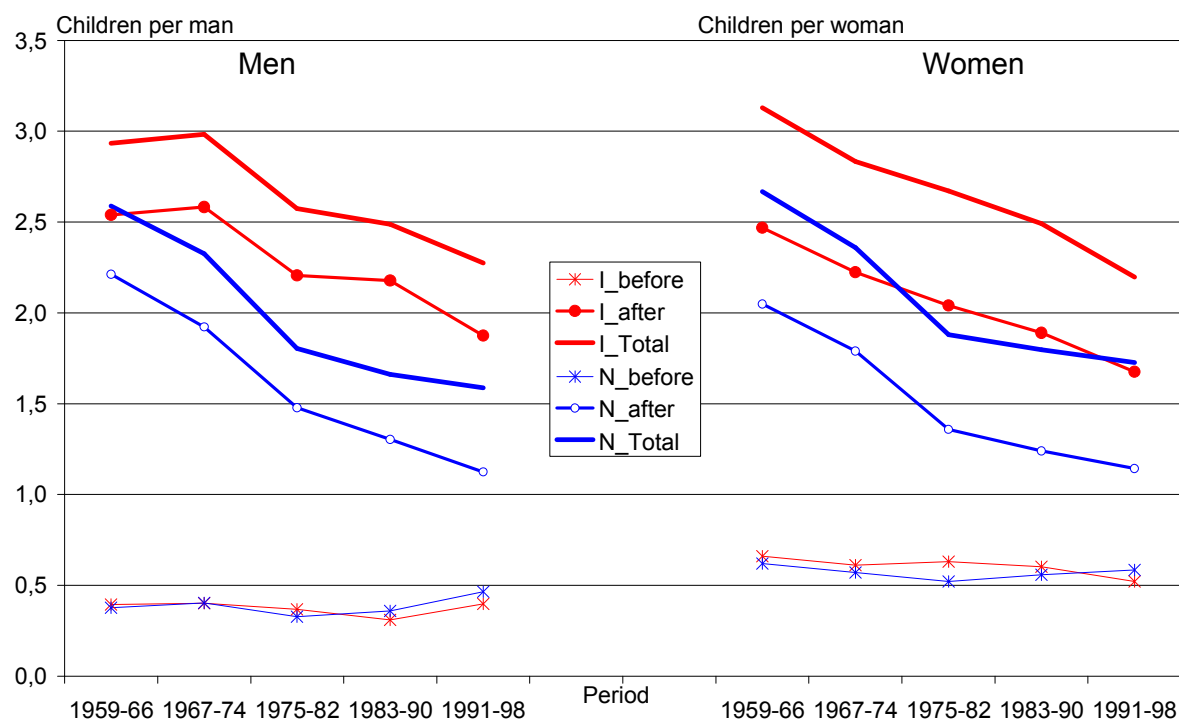


Figure 18. Difference between immigrants' and natives' fertility, by period (eight-year groups) and sex



The total fertility rate (sum of age-specific fertility rates) for the same period calculated using standard methods is 2.50 for immigrant women and 1.65 for women born in France, leading

to the false impression of excess fertility of 0.85 children per women for immigrants, while with our more accurate method the difference is 0.46 child per woman.

Usual statistics on immigrants' fertility are often based on the nationality of mother, adding an other bias, immigrants who became French being excluded from this statistics. Foreigners' total fertility, based on age-specific fertility rates, did not show any decline between 1990 and 1999, because of the strong and persistent biases included in the computation: the difference in total fertility is stable at 1.0 child more per woman, among foreigners (Legros 2003).

Immigrants by country of birth

This method can be used for any specific group of immigrants. Table 3 presents the result of such a comparison for immigrant women (born abroad, not French national at birth), by country of origin, with a comparison with women born in France, for the years 1991-98. The overall fertility of immigrant women reaches 2.16 children per woman, versus 1.70 for women born in France.

Table 3. Fertility differentials between immigrant women and women born in France

Birthplace	Average number of children per woman (1)	Fertility differential with women born in France			Fertility of women in the country of origin (2)
		total differential	of which: pre-migration	post-migration	
All females	1,74	-			
Women born in France	1,70	-	-	-	
Immigrant women	2,16	0,46	-0,09	0,55	
Other*	1,86	0,16	0,01	0,15	
Country of birth of immigrants					
Spain	1,52	-0,18	-0,26	0,08	1,23
Italy	1,60	-0,11	-0,34	0,23	1,24
Portugal	1,96	0,25	0,12	0,14	1,49
Other European Union country	1,66	-0,05	-0,32	0,27	1,44
Other European country	1,68	-0,03	-0,20	0,18	1,41
Algeria	2,57	0,87	0,08	0,79	3,64
Morocco	2,97	1,26	0,23	1,03	3,28
Tunisia	2,90	1,20	0,12	1,07	2,73
Other African country	2,86	1,16	0,06	1,10	5,89
Turkey	3,21	1,51	0,23	1,28	2,90
Other Asian country	1,77	0,07	-0,18	0,25	2,85
America or Oceania	2,00	0,29	-0,31	0,61	2,54

France: excluding overseas departements (DROM)

* : born French abroad or born in the DROM

(1) : total period fertility rate allowing for age at entry into France

Scope: women and births, 1991-8

(2) : Standard period total period fertility rates, 1990-9 ; source United Nations, 2003

Source : Insee-Ined, Study of Family History survey, 1999.

Women coming from Morocco, Tunisia and Sub-Saharan Africa have the highest fertility, around 2.9 children per woman. This is 1.2 child more than women born in France, but only half the difference estimated from usual statistics based on age-specific rates method (Legros 2003).

On the other hand, the fertility of immigrant women from Italy and Spain seems not as low as that given by the conventional method. Their fertility after migration is indeed higher than for

women born in France, and their lower total fertility is only due to their small number of children on arrival in France.

Conclusion

This new method provides a more accurate means to compare the fertility of immigrants and “natives” in terms of total fertility. It can be applied to other specific groups of migrants, for instance by level of education or occupation of their parents.

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Appendix : Figures 15 and 16 for men

Figure 15m. Difference between immigrant men's and natives' fertility, by age at entry.
France, years 1991-98

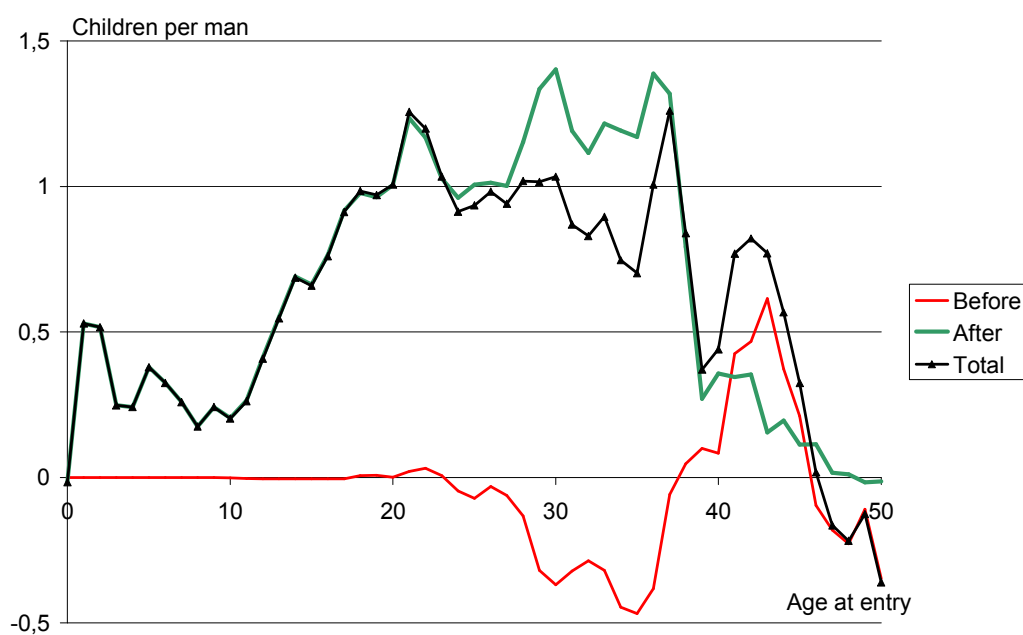


Figure 16m. Age structure of new male immigrants by age at entry
France, years 1991-98

