

RECONSTRUCTING THE FERTILITY PATTERN OF THE 1960'S SPANISH BIRTH COHORT BY PARITY PROGRESSION RATIOS: CRISIS, WHAT CRISIS?

Pau Miret-Gamundi

Researcher in the Department of Geography, "Autònoma" University of Barcelona, under the "Ramón y Cajal" Fellowship of the Spanish Ministry of Education and Science.

Email: pau.miret@uab.es

1. Research Goal

The indirect estimation of the final number of children per women through population censuses is no longer possible in Spain since 2001 census onwards, because the question that allowed conducting this estimation was sacrificed due to financial cut downs. This lost can be partially solved with the use of register data from 1975 onwards, which provide information on births according to the age of the mother and the parity order. At the time of writing this paper, the last calendar year available with that information was 2005. Nevertheless, the restriction in Census data renders virtually impossible conducting a sociodemographic analysis such as the association between educational attainment and fertility: There is not information at all on that issues in register data, and therefore we are compel to use sample data, that neither is so usual to get.

It is known that fertility in Spain boomed from the late fifties till middle seventies, an evolution that also experienced other European countries some years before (Miret, 2000). But after the boom followed the bust, which was presented with a sharp decrease in fertility rates from 1976, as happened in occidental Europe a decade before (Festy, 1970). However, the Total Fertility Rate has been rising from 1997 in Spain, timidly but progressively, reaching in 2005 the level of 1990 (point of very low fertility which kept still decreasing up to 1995), in fact, the Total Fertility Rate was of 1.35 children per women in 2005.

In order to know recent patterns of fertility we need to complement that analysis with the parity progression ratios (how many women have a first child, how many a second one, etc.) with a longitudinal perspective, for different birth cohorts. This is precisely the purpose of this paper which decompose the general fertility rate in parities and transform that fertility ratios from the cross-sectional to the longitudinal perspective.

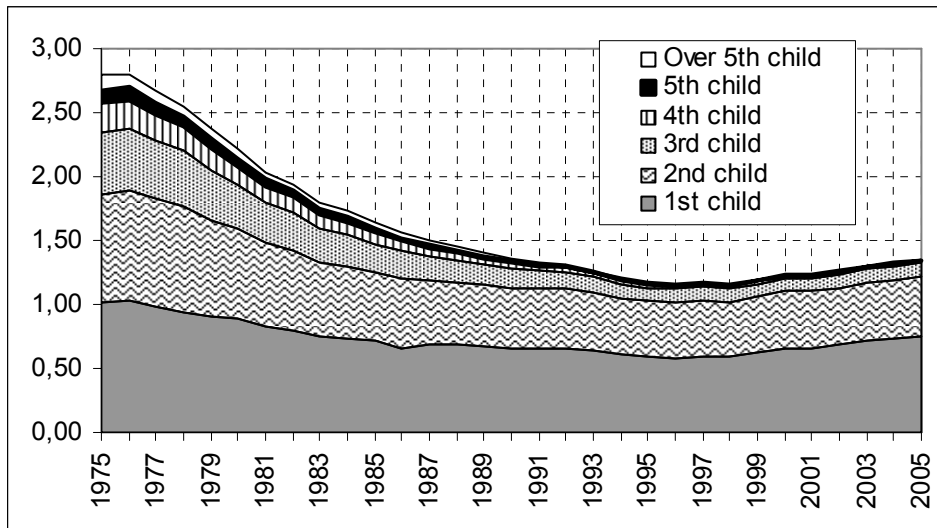
2. Trends in Contemporary Spanish Period Fertility

To start with, we will decompose the Total Fertility Rate (TFR) in its components according to the parity ratio, from the first order of TFR to the fifth order, grouping those which were over the fifth (see Figure 1). We can see from these indicators that the decline in the Spanish fertility rates from 1975 to 1996 was sharper as greater the parity order considered. For example, whilst in middle seventies the forth order of TFR was of 0.2 and the fifth one of 0.1, in the middle nineties those (orders forth and fifth) were virtually non-existent. In fact, one of the main factor in the fertility decline in Spain was the real descend in the number of children from the third or greater orders, and the delay in the timing at motherhood was by far the main explanatory factor. Moreover, during

the recovery of fertility from late 1990s, we only need to know the fertility rates up to the second order to have a reliable and complete vision of the global fertility of the period. What are then the demographic components of recent changes in fertility behaviour?

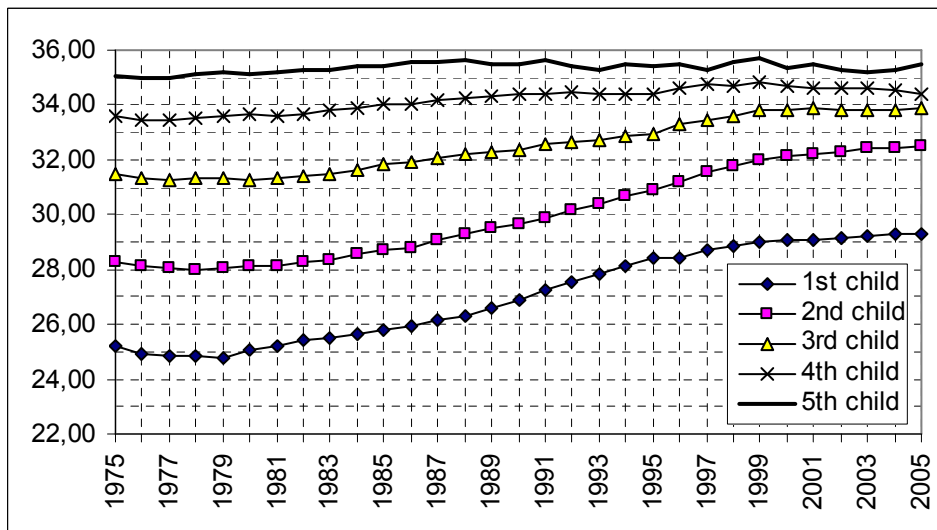
The Mean Age at Motherhood for each parity order is illustrated as a complement to the cross-sectional intensity of fertility rates (see Figure 2). Regarding to the timing, changes have been sharper as lower is the considered parity order. So, whilst the mean age at birth for the fourth parity has fluctuated around 34 years and to the fifth around 35 years, the mean age has move during the analysed period in two years for the third child and in four years for the first and the second (Figure 2). In fact, this paper shows that the delay in the timing at motherhood is the demographic reason that explains the fertility decline during that period. Once the age effects are controlled, the TFR could rise to 1.5 children per women during the mid-1990s (Ortega and Kohler, 2001).

FIGURE 1. Total Fertility Rate by parity ratio, Spain, 1975-2005



Source: own elaboration from registers and population censuses.

FIGURE 2. Mean Age at Motherhood by parity ratio, Spain, 1975-2005



Source: own elaboration from registers and population censuses.

This paper provides a summary of the birth cohort behaviour in order to ascertain the extent to which the fertility decline between 1975 and 1980 and the extraordinary low fertility of the 1980s and 1990s had left its print in the birth cohort's patterns. This analysis also provides information about the main characters of the increase in the number of births experienced from late 1990s till now in Spain. Are we witnessing a fertility recovery from the 1960s baby-boomers? Is fertility from the 1980s baby-busters increasing as predicted by the demographic cycles theory?

In fact, comparing the two first figures we realise that the stop in the fertility decline intensity has coincided with the stop in the delay in the timing of motherhood. The hypothesis that can be inferred is that the recovery in fertility is associated with the end of the trend of having children later.

3. Total Cohort Fertility Rate in Spain

The Total Cohort Fertility Rate is built as the addition of the age specific fertility rates from the 15th till the 50th anniversary. In fact, the first birth cohort for which we estimate this indicator is for those born in 1960 (with 15 years in 1975, first year for which we have information), and the last birth cohort that we can follow to the end of its fertility life is that of individuals born in 1955 (aged 50 in 2005, last published data presently available). In sum, for those born before 1960 we have censured data, and for those born after 1955 we have right censored data.

If we consider that each single birth cohort in the five-year group of those born in 1950-54 behaves in a similar way, we are able to build its fertility pattern from their 21 years till their 50 (see Figure 3). As we mentioned above, the fact of having to start at 21 means that we lack part of the pattern. As we can see in Figure 3, at that age first and second fertility parity ratios were quite significant for those born in the first five years period of the 1950s (with age specific rates of 0.07 for first child, and 0.02 for the second child). Because of that, in reference to these first two orders, we can just locate the modal age –as a timing gauge–, that would be 23 years for first fertility (with a rate of 0.11 first children by women) and 26 for the second order children (with a rate of 0.06). Nevertheless, it is not possible to calculate with these data neither the final intensity of the fertility nor its timing, as the pattern before 21 years of age remains unknown.

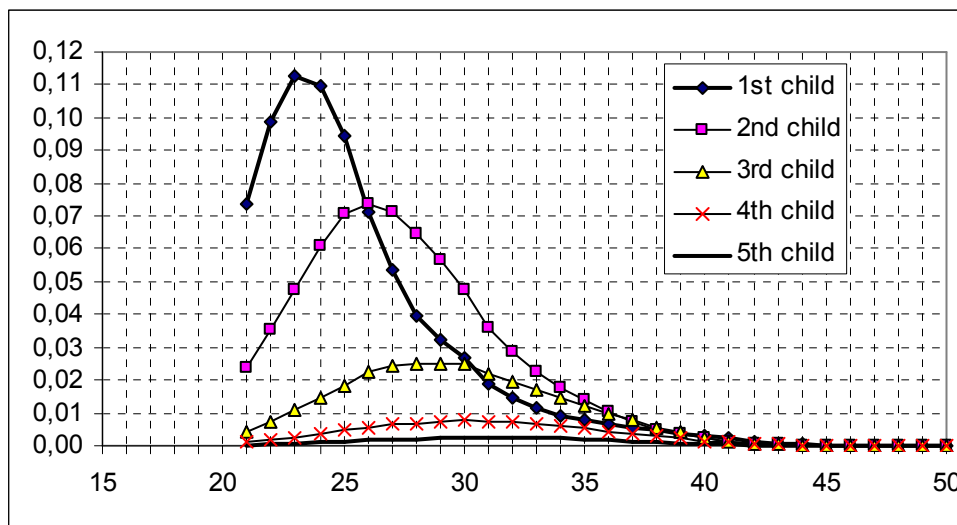
The maximum age threshold is clearly reflected in Figure 3, as it can be easily noticed for the 1950-54 female birth cohorts in all the analysed birth parities, fertility was virtually nil from the 40th years of the women. Because of that, we can have a complete vision of the fertility pattern for this birth cohort group from third parity ratio onwards. Thus, we can estimate that a 30% of women born in 1950-54 have had a minimum of 3 children, and that the third child came at the mean age of 30.2. Moreover, 10% of these women had a minimum of 4 children (thus, 20% stopped at 3rd child), with a mean age at the fourth child of 31.3 years; while 3% had a minimum of 3 children (that is, 7% had just 4 children), with a mean age at fifth order of 32 years (see Table 1).

As a matter of fact, table 1 can be read as a longitudinal table with a base of 100 childless individuals who are gradually leaving this status as they progress through each parity at a specific mean age at motherhood: subtracting the percentage of a specific parity from the former one we obtain different family sizes (childless, with one child, with two children and so on...).

For those born in 1955-59 we can estimate a complete fertility pattern by parity (Table 1, Figure 4), assuming that the fertility reached before 16 was zero. In other words, with

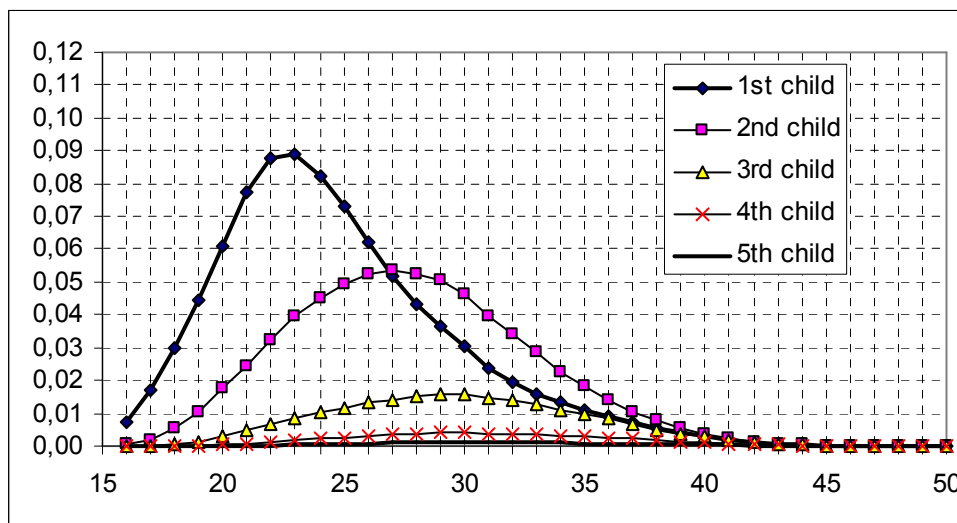
data from 16 to 50 years is enough for the estimation of complete fertility. Thus, the Total Cohort Fertility Rate for 1955-59 birth cohorts was of 0.91 (that is, 9% of them were childless), having a first baby –those with at least one child- with a mean age of 25.3 years. They had a second child in a 67% with a mean age of 28.4, meaning that a 24% had a family size of 2 children. Furthermore, they had a third child in a 21%, with at mean age at third motherhood of 30.3 years, that is, a 46% of this birth cohort constituted a family with a pair of children, this was the more usual family size for that birth cohorts in Spain. The intensity for a fourth parity children was of 0.06, and for a fifth of 0.02, with a mean age respectively of 31.2 years and 32.0 years, meaning than 15% had a family size of three children and a 4% of four children. In sum, 2% formed a family with four children.

FIGURE 3. Age Fertility Rates by parity, 1950-54 women birth cohorts in Spain



Source: own elaboration from registers and population censuses.

FIGURE 4. Age Fertility Rates by parity, 1955-59 women birth cohorts in Spain



Source: own elaboration from registers and population censuses.

If we compare the fertility pattern of the 1955-59 birth cohorts with those born five years before, we realise that there was a substantial decrease in final fertility. Whilst those born in the 1955-59 had 3 children in a 30%, the 1950-54 cohort reached a parity of 3 in a 21%, and the percentages at parity 4 were respectively of 10% and 6%. The percentage of women who have had 5 or more children was 3% in the 1950-54 cohort and 2% in the 1955-59 cohort.

TABLE 1. Cohort Total Fertility Rate and Mean Age at Motherhood by birth cohort

PARITY	1950-54 birth cohorts		1955-59 birth cohorts		1960-64 birth cohorts	
	Intensity	Timing	Intensity	Timing	Intensity	Timing
0	100%		100%		100%	
1			91%	25.3 years	88%	26.0 years
2			67%	28.4 years	62%	29.4 years
3	30%	30.2 years	21%	30.3 years	15%	31.1 years
4	10%	31.3 years	6%	31.2 years	3%	31.8 years
5	3%	32.0 years	2%	32.0 years	1%	31.6 years

Source: own elaboration from registers and population censuses

If we also compare the modal age between birth cohorts, we obtain a clear image of the modest delay in the timing of fertility. Although for those born in 1955-59 the modal age at first child was also 23 (with a rate of 0.09, two decimal points lower than for those born five years before). For the second child, the modal age was situated at ages 26, 27 and 28 (with a rate of 0.05, two decimals less intense than for the 1950-54 birth cohorts). However, the age at 3rd child was pretty much similar between the two birth cohorts. To make a long story short, it seems that 1950s Spanish birth cohorts experienced a reduction in the final fertility intensity but with a quite similar timing.

Cohorts born from 1960 to 1964 were in 2005 41 years old the younger and 45 the oldest. We will assume that they have the same behaviour, which allow us to build the pattern up to the 42 till the 45 of age for the oldest birth cohorts. Taking into account this assumption, we have built the age fertility rates by parity from 15 until the 45 years for the 1960-64 birth cohorts. This estimation is considered to approximate to the final fertility, as fertility is virtually zero at 45. Clearly, fertility rates have fall and suffer major delays (Table 1), but the fall at these values is not as dramatic as they are usually estimated from the cross-sectional analysis. So, the childless level expected for these cohorts is of 12%, three points higher than for those born five years before. First child arrived when they were 26.0 years (for the 88% that had at least one), and a 26% of the components of these cohorts remain with one child (an increase of 2 percentage point in respect to the former birth cohorts.) The more usual family size was having 2 children for this cohort, as a 47% constituted a family with a couple of children: one percentage point higher than the cohorts born five years before. The mean age at motherhood for women with at least two children (62% of those born in 1960-64) was of 29.4 years (one year later than those born in 1955-59). Even a quite significant 15% had at least three children, with a mean age of 31.1 years, forming eventually a family of three children in a 12% (three percentage points lower than former birth cohorts.) Families with four or five children were quite a minority: a 3% had fourth children and a 1% five (halved the percentages for the former birth cohorts), with a mean age of 31.8 and 32.6

years respectively. To sum up, we can estimate the final fertility for 1960-64 birth cohorts in 1.7 children per women, two decimals lower than the fertility reach by those born in 1955-59, but substantially higher than the period fertility rate of the last decades of the 20th Century, and even higher than the 1.5 calculates for Spain with a methodology than allows to incorporate the delay in timing for period indicators.

4. Parity Progression Ratios

The paper finally would provide with an analysis for the cohorts born during the 1960s showing that the crisis for these cohorts has not been as dramatic as inferred by cross-sectional analyses. Furthermore, it also is observed a new pattern for those born during the 1980s, that seems to confirm the demographic cycle theory (Easterling, 1987).

Bibliographic References

Easterlin, R.A. (1987) *Birth and Fortune: The Impact of Numbers on Personal Welfare*, Chicago, Chicago University Press.

Festy, P. (1970). “Évolution de la fécondité en Europe occidentale depuis la guerre”, *Population*, 26(2).

Miret, P. (2000) “Fathers and Families in Contemporary Spain: From Dictatorship to Democracy”, Caroline Bledsou, Susana Lerner and J.I. Guyer (ed.), *Fertility and the Male Life-cycle in the Era of Fertility Decline*, Oxford, Oxford University Press, *International Studies in Demography*, p. 275-292.

Ortega, J.A. and Hans-Peter Kohler, H.P. (2001) “¿Está cayendo realmente la fecundidad española?”, *Revista Española de Investigaciones Sociológicas*, n. 96, 2001, p. 95-122.