

# Later Fertility and Birth Intervals: A Comparison of Progressions to A Second Child between France and Spain

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## Abstract

Increasing age at birth and small family sizes are significant features of contemporary low-fertility settings. Examining the *quantum* and *tempo* of fertility, parity progression ratios and birth intervals allow analyses by parity. We focus on transitions to second births and compute these indicators by age at first birth. It compares two countries with different family and fertility regimes, France and Spain, relying on fertility surveys (*Enquête Famille et Logement*, 2011, and *Encuesta de Fecundidad*, 1985, 1999, 2018). The evolution of both indicators across cohorts 1935 to 1974 depicts different patterns. France shows high and steady fertility levels, despite the postponement of first births and an increase in intervals before the second birth. On the contrary, Spain first experienced a fertility decline, before outlining a pattern of recuperation of postponed births. Among young cohorts, however, there is a large increase in the birth interval for women who became mothers before their 30s. Above this age, second births occur faster after the first birth than at younger ages, and it has not changed much across cohorts in both countries. Data on men's fertility by parity and age for France also provide information on the extent to which constraints at late ages are gendered. In particular, short intervals (< 3 years) between first and second births have declined among late first-time fathers (35+), while they remained constant across female cohorts. Overall, this analysis raises questions, for instance, regarding (wo)men's preferences for spacing births, the number of children they desire, and their achieved fertility.

## Extended abstract

### *Introduction*

The postponement of births is an extensively documented feature of the low-fertility countries, as well as the consequent increase in late births taking place over age 35–40 (Beaujouan and Sobotka 2017). While French women have a first birth at 28.8 years old on average, Spanish women tend to wait longer, with an average age at first motherhood of 31.1 years old (Eurostat 2021). Within the European context, France exhibits one of the highest Total Fertility Rate (TFR) with 1.8 child per woman in 2019, while Spain has one of the lowest fertility levels, with 1.3 child per woman (Pison 2019). Explanations for fertility differences between countries lie in their economic contexts and political responses, according to the type of their familial regimes (Luci-Greulich and Thévenon 2013). In Spain, women have to rely more on their relatives than on the public state to take care of their (prospective) children, while in France, policy measures promote more the reconciliation of work and motherhood (Esping-Andersen 2009).

In addition, there is a general preference for a two-child family in Europe (Sobotka and Beaujouan 2014), but preferences for two or even three children are particularly high in France (Rossier, Brachet, and Salles 2012). While some low-fertility countries such as Austria or Germany have recently shown preferences for family size ideals on average below two children (Goldstein, Lutz, and Testa 2003), Spanish women still express preferences for a two-child family, resulting in a gap between desired and achieved family size (Beaujouan and Berghammer 2019). In our study, we explore the processes of fertility postponement and recuperation in Spain and France, and particularly whether limited recuperation of delayed births at older ages in Spain as compared to France could act as an additional break to fertility.

The analysis of Parity Progression Ratios (PPRs) allows examining the *quantum* dimension of fertility for different parities separately. Comparative approaches of high-income contexts between cohorts have already relied on this indicator (Frejka 2008; Frejka and Sardon 2007; Zeman et al. 2018). Analyses of progression to a further birth *by age* at the previous birth are rare, or compare young motherhood (before 20 years old) with later births (Kreyenfeld 2002; Tomkinson 2019). We can however expect that changes first birth schedules are closely interlinked to age-specific parity progression ratios, and that when women start having children later, the overall share of women who have a second child at later ages is affected. To the extent that births are increasingly postponed to one's thirties and given the strength of the two-child family norm in Europe (Sobotka and Beaujouan 2014), this paper focuses on transitions to second births, particularly when the first birth occurred over age 30, in a cohort and comparative perspective between France and Spain.

To also examine the *tempo* dimension of fertility postponement and recuperation, the analysis has a particular interest in birth intervals between first and second birth. Recently, researchers' interest in this indicator has been mostly motivated by concerns for perinatal outcomes when the pregnancy occurs within a short timeframe (inter-pregnancy lower than around 1–2 years) after the previous birth (Pimentel et al. 2020). However, given the ongoing trend to postpone fertility, there may be an increasing need for hurrying a birth to achieve the desired family size, especially among women for whom the fertility decline with age is sharper than for men (Dunson, Colombo, and Baird 2002). In

that perspective, there is also a lack of comparative studies of fertility behaviours between men and women by age (Dudel and Klüsener 2021), due to a lack of data. In addition to the comparison of birth intervals between first and second birth in France and Spain, the French data offer the opportunity to explore gendered differences in male and female’s late fertility.

### Data

A usual challenge when examining the occurrence and timing of transitions to second and third births, especially at women’s late ages, relies on sample sizes limitations and the availability of information on fertility histories and children’s date of birth. This paper relies on 146,695 observations retrieved from the French *Familles et Logement* survey (Ined–Insee, 2011) and on a sample of 12,277 women from three *Encuestas de Fecundidad* for Spain (INE, 1985, 1999, and 2018). Note that the number of observations for Spain is twice as small as for France, resulting in less reliable findings, particularly at late ages at birth (35+). The cohorts studied are distinguished between 10-years cohort groups, except for the oldest (1934–39) and youngest (1970–74) cohorts. Results are also displayed for men with the French data (n=62,989), allowing to discuss gendered differences in late fertility behaviours.

### Preliminary Results

Between the 1935 and 1974 cohorts, the mean number of children women had decreased both in France and Spain, but while the decline was slow in France it was extremely fast in Spain. Examining the birth cohorts from which age at first birth started rising in both countries, Table 1 shows that the mean age at first birth was minimum among French women born in 1940–49 (24.7 years old) and among women born ten years later in Spain (24.2 years old for the 1950–59 cohort). The increase that followed was much faster in Spain, as the mean age at first birth was already 29.8 years in the 1970–74 birth cohort, while French women from the same cohort became mothers at 27.7 years old on average. We can thus expect the 1940–49 birth cohort in France and the 1950–59 birth cohort in Spain to be pivotal cohorts: the timing and occurrence of second births may also change from these cohorts that started postponing.

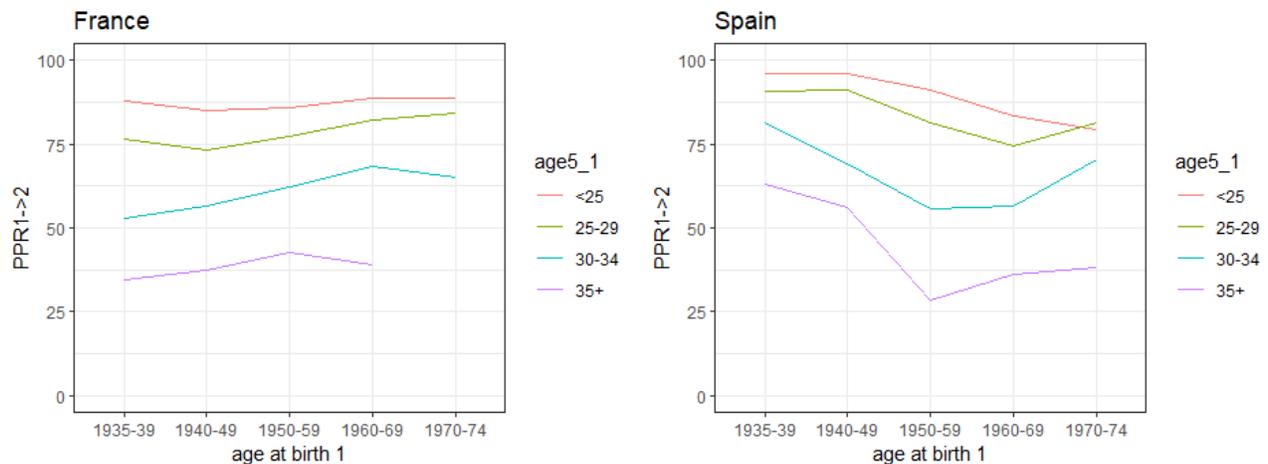
Table 1: Mean age at first birth and mean number of children per woman by cohort and country

| Birth cohort | France                  |                                   | Spain                   |                                   |
|--------------|-------------------------|-----------------------------------|-------------------------|-----------------------------------|
|              | Mean age at first birth | Mean number of children per woman | Mean age at first birth | Mean number of children per woman |
| 1935-39      | 25.0                    | 2.4                               | 25.8                    | 3.1                               |
| 1940-49      | 24.7                    | 2.1                               | 25.1                    | 2.7                               |
| 1950-59      | 25.6                    | 2.0                               | 24.2                    | 2.1                               |
| 1960-69      | 27.1                    | 2.0                               | 27.0                    | 1.5                               |
| 1970-74      | 27.7                    | 1.8                               | 29.8                    | 1.4                               |

Parity Progression Ratios to second births (PPR2) are computed as the number of women who have had a second child among women who have had at least one child. There was a substantial age gradient in progressions to second births in both countries (Figure 1). For instance, in France, while 9 out of 10 women who had a first child before age 25 had a second one, only one-third of women who had their first child from age 35 onwards proceeded to a second child.

PPR2 tended to increase slightly across birth cohorts in France, but was rather stable among the youngest women (less than 25 years old). After age 30, the increase in transition to second births was already visible before postponement started (from the 1950-59 birth cohort), but then stopped while women were still postponing their first birth. In Spain, we distinguish much better two phases: transitions to a second birth declined from the 1935–39 to the 1950–59 birth cohorts, and started increasing again from that pivotal cohort among women who became mothers at age 30 or older (Figure 1). This focus on second births suggests that, in France, progressions to second births were evolving somewhat independently from childbearing postponement. In Spain the increase in the latest cohort and at later ages may correspond to recuperation of births: the large number of women now having their first child after age 30 inflated PPR2 in these age groups to levels closer to those usually seen at younger ages.

Figure 1: Parity progression ratios to second births (PPR2) across cohorts by age at first birth and country

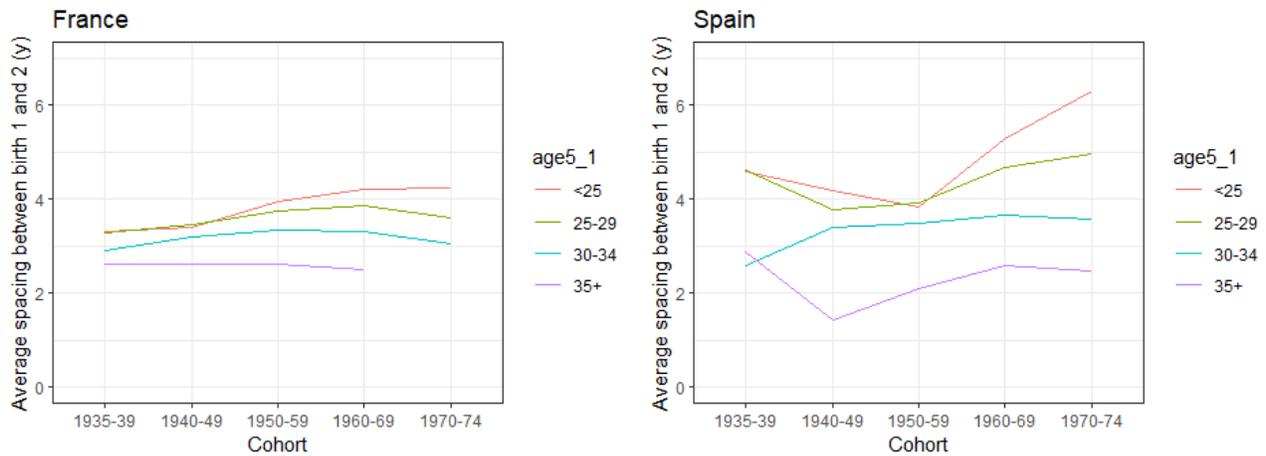


Note: Results for the 1970–74 cohort are displayed only until age 34 for France because women were 37 years old at the time of the survey (EFL 2011). While sample sizes are sufficient for France, they are small (<100) above age 35 for the 1935 to 1960 Spanish cohorts.

Regarding the timing of transitions, the interval between first and second births is computed as the difference between each child’s birthdate. Among women who had at least two children, the average interval has increased from 3.3 years for the 1935–39 cohort to 3.7 years for the 1970–74 cohort in France. In Spain, it slightly decreased from 4.2 years to 3.8 years between the 1935–39 and 1950–59 cohorts, and then increased again to more than 4 years. Women born in the 1940s who had their first child before age 25 and at age 25-29 had rather similar and longer waiting time before

having a second child (Figure 2). This birth interval increased particularly among the youngest women and particularly sharply in Spain, where women born in the early 1970s, who became mothers at the youngest ages, waited on average more than six years before enlarging their family. This long waiting time is way above the average birth interval in France (slightly more than four years among the same cohort of youngest mothers). This can be linked to the fact that among women of the youngest cohorts who became mothers at young ages, less Spanish than French women have a second birth within a short timeframe after the first child (Figure 3). However, although late entry into motherhood became more frequent across cohorts, time to second births after the later first births started decreasing slightly for the most recent birth cohorts in both countries. This possibly reflects a time-squeeze effect, i.e., the fact that women accelerate the transition to further births when they have postponed the birth of their first child.

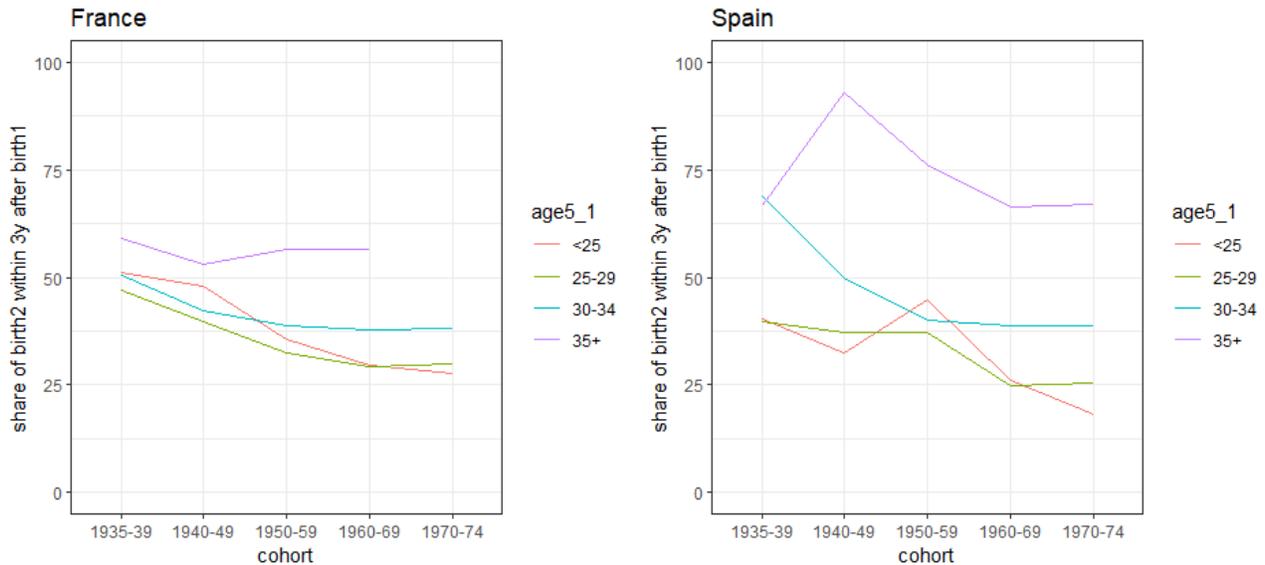
Figure 2: Average interval between the first and second births across cohorts by age at first birth and country



The variations in timing of second birth can also be seen in the share of women with a short duration between the two first births (defined here as less than three years). Figure 3 reveals to what extent late mothers are specific among all age groups. For every group of women who became mothers before age 35, shares of short birth intervals have declined in France and Spain, eventually stabilizing from the 1950–59 cohorts. Among late mothers, short durations are particularly frequent and this has not changed much across French cohorts (not clear for Spain because of a small number of cases at 35+).

Results for men (only available for France) are similar to those for women (Figure 4). However, while shares of late first-time mothers waiting less than three years before having a second child have not changed much across cohorts, it has decreased among late first-time fathers. This difference indicates that men can wait longer than women before enlarging their families when they have started late. Still, when men have a second child, this birth occurs on average sooner than for younger men at first fatherhood.

Figure 3: Shares of short intervals (< 3 years) between first and second births across cohorts by age at first birth and country



### Discussion

Our results highlight informative differences between France and Spain. In Spain, while the mean age at first birth was still decreasing, progressions to a second birth were strongly declining in all age groups, and particularly above age 30. Then, from the 1950–59 cohort, women that started to postpone parenthood and women who had a first child at age 30 or over experienced an increase in progressions to second birth. This possibly indicates recuperation among these cohorts. In contrast, in France, although PPR2 also increased in the older age groups across most of the cohorts, patterns of first-birth postponement and progressions to a second child appeared little related to each other cohort-wise. These results suggest that women push towards having a second child in both countries, but that the ongoing fertility trends driven by contextual factors or changes in preferences are even more relevant than structural shifts linked to the increasing age at first births to determine progression to second births.

In terms of birth intervals, it is interesting to note that, in both countries and among the most recent birth cohorts, the waiting time between the first and the second child started to drop among women who had a child above age 30. However, such time-squeeze did not occur immediately in the first cohorts postponing, but only one or two decades later. Possibly, the first postponing cohorts did not have time to adapt, while the following cohorts started somewhat accelerating the conception of the second child. It is also possible that the increase in birth intervals was linked to a diminution in women's parity. For the conference, we will also analyse the average spacing between the two first births by family size attained at the end of the reproductive life (2 children *vs* at least 3). To go further, the paper will also address the occurrence and the timing of transitions to third births, which have been declining across cohorts at a sharper rate in Spain compared to France.

In any case, when entry into motherhood is postponed over age 30, second births occur faster after the first one in both countries. One could also note that Spain is among the countries with the highest share of late first births in Europe: in 2014, 4.5 percent of the first-birth rate could be attributed to women aged 40 and above, against 1 to 3 percent in most other countries (Beaujouan 2020). In Spain, women who had a first child after age 35 tended to have a second child much faster than in France. Nonetheless, family size desires are more often unmet in Spain than in France (Beaujouan and Berghammer 2019), which suggests that time is missing for some women to have children despite this acceleration.

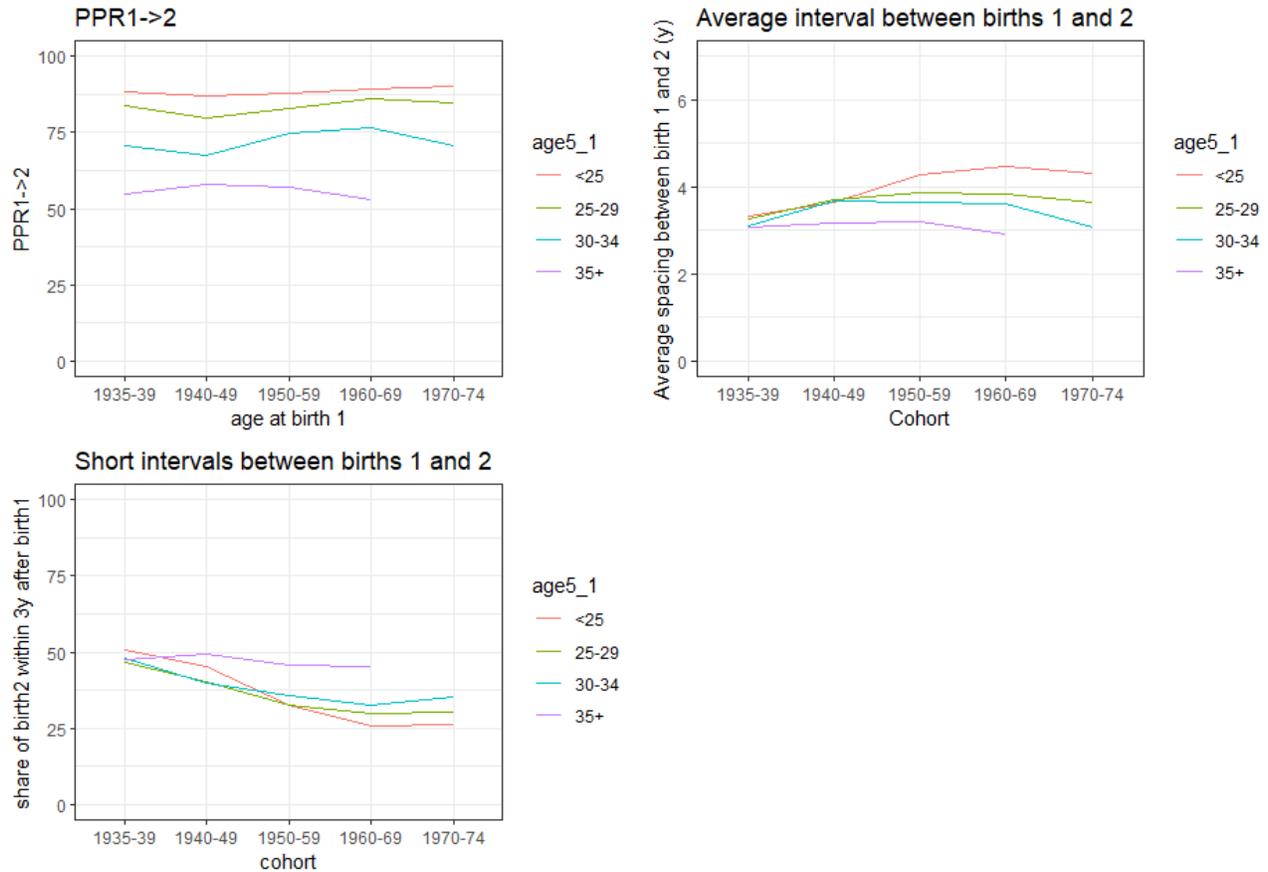
Information on individuals' decision-making regarding birth spacing would also help to understand these results better. Although opinion surveys often ask about ideal ages at parenthood, ideal family size or fertility intentions, they are rarely interested in preferences regarding birth intervals. On the one hand, for instance, parents can have preferences for a particular age gap between children regarding their education and development in their early years. They (especially women) could also want to minimize the duration of career interruptions following a birth (Ní Bhrolcháin 1987). On the other hand, preferences can be constrained by economic or partnership circumstances, leading to fewer second births or higher birth intervals. For instance, the employment rate among young people is higher in Spain than in France<sup>1</sup>. Moreover, according to previous studies, having a second child after a separation is rarer in Spain than in other European countries because entering a new partnership after breaking up is less common, while in France, people tend to have two children before a separation (Kreyenfeld et al. 2017).

The comparison between men and women at older ages also raises questions about the role of biological constraints. On that matter, the data used lack information to control for difficulties achieving a pregnancy. This analysis also adds that, at late ages, men could more easily realize their fertility intentions than women (at least in France). Finally, one can wonder what contraceptive (wo)men use when they have a first or second birth late. Although this could enlighten the analysis of birth intervals (Yeakey et al. 2009), information about the methods used by age and parity is usually lacking.

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<sup>1</sup> See: <https://data.oecd.org/unemp/youth-unemployment-rate.htm>, accessed 18/10/2021.

Figure 4: *Quantum and tempo* of second births for men across cohorts by age at first birth (France)



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