The effect of unemployment on the realization of fertility projects in France

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Introduction

In France, as in most European countries, entry into parenthood depends on a set of preconditions. Besides marital stability, it is important to have completed one's studies and, even more, for at least one of the two members of a couple to be in a stable employment situation, ensuring the availability of the resources required (housing, stable income) to found a family (Régnier-Loilier & Solaz, 2010).

Along with changes in norms and values, notably the spread of individualism and norms of self-realization through work, and the emancipation of women (Lesthaeghe, 1983), the rise of economic uncertainty has emerged since the 1970s as an essential factor in the delaying of age at first birth and decreasing fertility in Europe (Blossfeld et al., 2005; Adsera 2004 ; Adsera, 2011 ; Sobotka et al., 2011). In the context of increasing unemployment, young people may be led to remain in the education system and delay union formation and the births that follow. Decreasing individual income also increases the cost of having children and may lead to lower fertility (Becker, 1981). Economic instability can also indirectly affect birth rates by disrupting the "market" for unions, due to the lesser "attractiveness" of men with a low income or an unstable occupational status (Oppenheimer, 1994). Conversely, two factors can work in favour of having children. On the one hand, the opportunity cost of children—the income that a parent has to give up to raise a child—is lower for the unemployed. On the other hand, for those with limited control over their economic situation, having children can be a strategy for reducing uncertainty, with the private sphere seeming less uncertain than the public sphere (Friedman et al., 1994). Thus, in case of an uncertain employment status or economic context, becoming a parent can be a way to make the future more secure. This explanation is particularly applicable in contexts where fertility is highly valued or when the time demands of work contradict those of family formation, notably due to insufficient availability of child care.

The economic crisis that most European countries have been experiencing has led to renewed interest in the question of the link between economic context and fertility

(Kreyenfeld et al., 2012 ; Pailhé, 2010). The surge in unemployment and the expansion of precarious employment among young people who are entering the labour market has apparently changed the behaviour of households with regard to fertility. Thus, there has been a substantial decrease in fertility in the majority of European countries, both in the countries most affected by the crisis, such as Spain, and in those least affected, such as Denmark and Norway (WIC, 2012).

France stands apart from many other European countries. Initially, it was thought that French fertility was insensitive to the economic crisis (Pison, 2011). Despite the crisis and rapidly increasing unemployment (Appendix 1), the country's fertility continued to increase until 2010, even attaining a mean of two children per woman (Appendix 2). However, beginning in 2011 the trend reversed: the deepening of the crisis, notably with the surge in youth unemployment, and its entrenchment were accompanied by a slight decrease both in the number of births and in the total fertility rate.

These changes observed at the macro level offer little evidence that can be used to analyse the relations between economic context and fertility, particularly since the vital statistics records on which the total fertility rate is based do not include birth rank. They thus do not allow us to determine whether first births, or those that follow, persist in the context of a crisis. Moreover, these data cannot be used to study whether men and women wishing to have a child have been led to abandon, delay, or maintain their fertility projects.

Analyses carried out at the micro level have shown that in France, economic instability leads to the postponement of first births (Meron and Widmer, 2002 ; Pailhé and Solaz, 2012). However, this research based on retrospective calendars investigated the fertility behaviour of older cohorts, and provides little insight into the consequences of the recent economic context. On the basis of prospective data, Toulemon and Testa (2005) showed that being unemployed in 1998 decreased the chances of having fertility intentions having been realized five years later. The effect was most marked for the first child. The arrival of the second child is generally subject to a different logic, guided in particular by concerns related to the spacing of births (Pailhé and Solaz, 2011 ; 2012). The effect of unexpected unemployment on the realization of fertility intentions remains unexplored.

The present study is an investigation of changes in individual fertility behaviour in the recent context of economic uncertainty. We used longitudinal data from the ERFI-GGS survey to analyse how the experience of unemployment has affected the realization of men's and women's fertility intentions. We hypothesized that the experience of unemployment may have altered men's and women's fertility projects, with precarity leading them to reconsider their initial intentions, delaying the decision to have a child.

I. Data and method

1. Information contained in the survey

Only longitudinal data collected over a relatively long period can be used to confront fertility intentions and their realization, linking both to individuals' occupational trajectory. To do this, we drew on the three waves of the French *Generations and Gender Survey* (Ined-Insee, ERFI-GGS) survey (10,079 peoples aged 18-79), which offers a six-year observation window (2005-2011).

Besides information describing the respondent (sex, age, conjugal status, number of children, occupational status, etc.), the data from the first wave include information on the respondent's fertility intentions, on the basis of three questions:

- "*We are now going to talk about your intentions to have children. Would you want to have a/another baby, now or later (besides the one that you are expecting)?* Yes/No, but maybe later/No, neither now nor later/Do not know"[1]

- followed, if applicable (if the answer to the preceding question was "Yes", "No, but maybe later", or "Don't know"), by "*Would you want to have a/another child during the next three years?* No / Probably not / Probably yes / Yes / Do not know";

- followed, if applicable (if "No", "Probably not", or "Do not know") by "*Supposing you do not have a/another child during the next three years, do you intend to adopt or have a child later all the same?* No / Probably not / Probably yes / Yes";

On the basis of the answers given to these three questions, a single indicator with seven categories was constructed. Either the person intends to have a child...

- "in the next three years" ("yes" response to the first or second question)
- "probably in the next three years" ("probably yes" response to the second question)
- "later" ("yes" response to the third question)
- "probably later" ("probably yes" response to the third question)
- "probably not later" ("probably not" response to the third question)
- "no, never" ("no, neither now nor later" response to the first question, or "no" response to the third question)
- "does not know" ("do not know" response to the third question).

[1] In the French version the equivalent of the word “definitely” (*certainement*) was removed from the response categories after the test survey because it was sometimes confused with “probably” (*probablement*) and weakened the firmness of the intention with respect to a simple “Yes” or “No” answer.

The second and third waves give information on whether or not the respondent had had a child since the first wave. If a child was born, its birthdate (month and year) is known. Moreover, these two waves provide precise information on the respondent's occupational trajectory since his or her 16th birthday.[2] Each change of status (between studies, wage employment or self-employment, unemployment, inactivity, retirement, illness, parental or maternity leave) is recorded and dated (to the month),[3] as long as the situation lasted at least three months.[4] For the small number of respondents (345) who took part in the third wave (2011) without having participated in the second (2008), the activity status retrospective bears only on changes that took place after the first wave of the survey (2005), which is not problematic in our case since we limit our observations to the period 2005-2011.

2. Scope of the study

Because our approach is longitudinal, the analysis is focused on persons who participated in at least one of the two later waves (2008 and 2011) as well as the first (2005). The scope was limited to persons who could still have one or more children after 2005: women who were below age 45 in the first wave (single or in a union with a man below age 50) and men who were below age 50 (single or in a union with a woman below age 45), and who, to their knowledge, were fertile.[5] Among these women, 1,677 indicated at the time of the first wave that they did not wish to have children, neither now nor later (1,628), or probably not (49). And in fact, few of these women subsequently initiated a pregnancy (less than 9%: **Table 1**), confirming the fit between fertility behaviours and projects in individuals who do not wish to have children (Régnier-Loilier and Vignoli, 2011).

Table 1. Proportion of respondents having initiated a pregnancy since 2005, by reported intentions in 2005

Intention in 2005	Initiated a pregnancy between W1 and W2	Initiated a pregnancy between W2 and W3	Did not initiate a pregnancy between W1 and W3	n
Yes within three years	52,0	10,2	37,9	478
Probably yes within three years	34,2	13,7	52,1	507
Yes later	12,2	15,5	72,4	333
Probably yes later	10,7	11,2	78,1	169
Probably not later	2,3	7,5	90,2	49
Never	4,6	4,3	91,2	1628
Does not know	13,4	12,5	74,1	49
Total	18,3	8,8	72,9	3213

Source: Ined-Insee, ERFI-GGS1-3, 2005-2011 (weighted data)
Champ: Persons of childbearing age

[2] The activity retrospective is only available for the respondent, not for any partner the respondent might have.

[3] If the respondent no longer precisely remembered the month, the season was requested instead.

[4] Or less, if the respondent nevertheless considered this period important in his or her life. Certain recorded periods are thus shorter than this, but there are few such periods.

[5] To simplify the presentation of the results, we will speak of persons "of childbearing age."

As the aim of our study was to investigate the extent to which a period of unemployment negatively affects the project of having a child, we restricted the scope of analysis to respondents who in 2005 intended to have a child, in the subsequent three years or later, or who did not know (1,536 persons). Among these, 670 (44%) initiated a pregnancy (including 76 who were expecting a child at the time of the third wave). One in five respondents (297) had experienced at least one period of unemployment since 2005, in about half of cases, for a duration of at least 12 months.

3. Methodology

Before investigating the relationship between pregnancy during the observation period and the respondent's occupational trajectory, we first confronted their occupational status at the time of the first wave and their fertility intentions (whether or not they participated in the later waves; 5,795 persons). Whether or not a respondent has had a child is indeed closely linked to the degree of intention (Régnier-Loilier and Vignoli, 2011), which itself can depend on the respondent's occupational status.

In the next step, we investigated the taking of the *decision* to have a child between the first wave of the survey (2005) and the later ones (2008 and 2011). What interests us here is not the date of birth of children born in the period under study, but the date when the *decision* to conceive them was taken. As this information was not present in the survey, we went back nine months from the child's birthdate, to the theoretical date of conception, and then three further months to reach the date on which it may be supposed that the couple decided to conceive.[6] Thus, for the purposes of the study, persons who had a child in the 12 months following the first survey were not considered to have initiated a pregnancy during the observation period. Conversely, persons expecting a child at the time of the third wave (or the second for those who did not respond to the third wave) were so considered. In this case, the date of the "decision" was obtained by taking away 12 months from the expected date of birth.[7] When a single person had more than one child during the period, only the date of the decision on the first was used, as the objective was to establish a link between the expression of intentions in 2005 and the realization of the project.

More precisely, our approach consisted in situating the date of the "decision" to have a child (when applicable) after the first wave in the respondent's occupational trajectory, in order to study how a period of unemployment can delay the project of having a child, and even limit the arrival of one over a six-year period. To do so, we first carried out a non-parametric

[6] The mean amount of time required to conceive is on the order of three to five months for a young couple, but it then increases substantially with age (Leridon, 2004), and in reality it is highly variable from one couple to another (certain pregnancies happen in the month following the decision to have a child, others after several years of attempts).

[7] In the survey, only births and ongoing pregnancies were recorded, while miscarriages or abortions, which are generally very little reported in surveys, were not.

duration analysis: we estimated and compared different survival functions using the Kaplan-Meier method. The duration studied was the one between the first interview and the decision to have a child. The observation covered the full 69-period month up to the third wave for third-wave respondents, but was censored at 36 months for those who only responded to the first two waves. This method also allowed us to include all of the respondents within the scope of the study in the analysis, a total of 1,536 persons.

Finally, we estimated a semi-parametric model, drawn from Cox (1972), in order to assess the effects of a period of unemployment on the realization of fertility projects. As various other factors affect the realization of fertility intentions (e.g., age, number of children already born, marital trajectory, the firmness of fertility intentions, etc.: Régnier-Loilier and Vignoli, 2011 ; Chapter 5), a range of individual characteristics were also taken into account. It has generally been found that the effect of unemployment on fertility varies according to sex (Kravdal, 2002; Mills, Blossfeld and Klijzing, 2005 ; Kreyenfeld et al., 2012): the estimates were thus calculated separately for men and women. Moreover, first births were distinguished from subsequent ones. In all of these models, the same explanatory variables were introduced: age and age squared (in order to take into account the non-linearity of the age effect), level of education (no qualifications, CAP-BEP [vocational lower secondary qualifications], baccalauréat, two years of higher education, more than two years of higher education), the size of the urban unit (rural or municipality of fewer than 5,000 inhabitants/from 5,000 to 200,000 inhabitants/more than 200,000 inhabitants/the urban unit of Paris). Two indicators of cultural context were added. As the fertility of immigrants is higher than that of native-born French citizens (Hamel and Pailhé, 2015), a dichotomous variable indicated whether the person was an immigrant. Similarly, as the more religious have more children on average (Régnier-Loilier and Prioux, 2009), a variable measuring religious practice was introduced (no practice, participation in ceremonies or services from one to five times per year, or more than five times per year). The degree of fertility intention reported in the first wave (wish to have a child within three years, probably within three years, later, probably later, or did not know) was also controlled for. All of these characteristics are drawn from the respondent's answers to the first wave of the survey. Dynamic variables were also introduced, however, to take into account changes in the individual's situation. Hence, a variable indicated whether the individual was enrolled in studies at date T[8] (only for the first birth, as this situation is much less common once parenthood begins), a second indicated whether or not the individual was unemployed, and a third specified whether the woman was inactive (only for women and for the second birth). In a second model (Model 2), in order to take into account the interactions between union formation and fertility, we introduced a further variable indicating whether or not the individual was in a union at date T. These three variables were calculated for each month

[8] T varying from 1 to 69, 1 corresponding to the first month after the first interview, 2 the second month, and so on.

between 2005 and 2011. Finally, in a third model, we sought to measure the cumulative effect of periods of unemployment. We thus used a dynamic variable measuring, at date T, the number of months spent in unemployment since the first-wave interview.

II. Fertility intentions and their realization according to occupational status

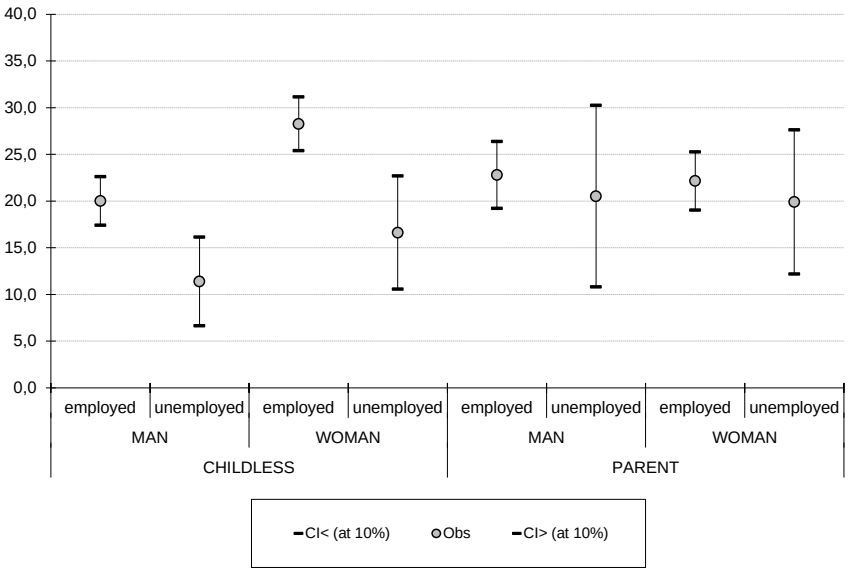
1. Intention to enter into parenthood within three years less common among the unemployed

One way to measure the effects of occupational instability on fertility behavior is to match short-term fertility intentions with individuals' occupational status, cross-sectionally. **Figure 1** shows the number of persons who reported in the first wave of the survey that they intended to have a child within three years[9] according to the respondent's sex, the number of children already born (including ongoing pregnancies), and the respondent's occupational status at the time (in employment or unemployed).

A marked effect of unemployment appeared in childless persons. Whereas 20% of employed men and 28% of employed women wished to have a child during the following three years, this was true of only 11% and 16% of unemployed men and women respectively (differences significant at the 10% level). This difference is partly attributable to structural effects. The unemployed were younger (age 27, on average) than those in employment (age 31). Moreover, they were more likely not to live with a partner (14% and 33% of unemployed men and women respectively lived with a partner, versus 38% and 46% of employed men and women). Fertility intentions were tightly linked to conjugal status: whereas 38% of childless respondents living with a partner wished to have a child within the following three years, this was true of only 8% of single respondents. After controlling for age and conjugal status, occupational status (unemployed vs. in employment) no longer had a significant effect on men's probability of wishing for a child within three years, but it continued to have a significant effect in women.[10] This difference in effects between men and women should not be interpreted to indicate that occupational status is less important for men's fertility projects: instead it is due to a structural effect, as unemployed men are less likely to live with a partner (Ekert and Solaz, 2001), a precondition for the formulation of fertility plans (Mazuy, 2009).

[9] Only the firmest positive response ("Yes") to the question "Would you want to have a/another child during the next three years?" was considered here. The same trend emerged when both "yes" and "probably yes" responses were included.
[10] Results not presented here, drawn from a logit model (available on request from the authors).

Figure 1. Proportion of persons wishing to have a child "during the next three years" by sex and occupational status (2005)



Source: Ined-Insee, ERFI-GGS1, 2005

Scope: employed and unemployed respondents of childbearing age

In women and men who already had at least one child, on the other hand, employment status had no effect on the wish to have another child in the three following years. In France, most couples wish to have at least two children, and the timing of the arrival of the second child (and any further children) seems to be determined above all by spacing between births and by the age of the parents (Régnier-Loilier, 2007).

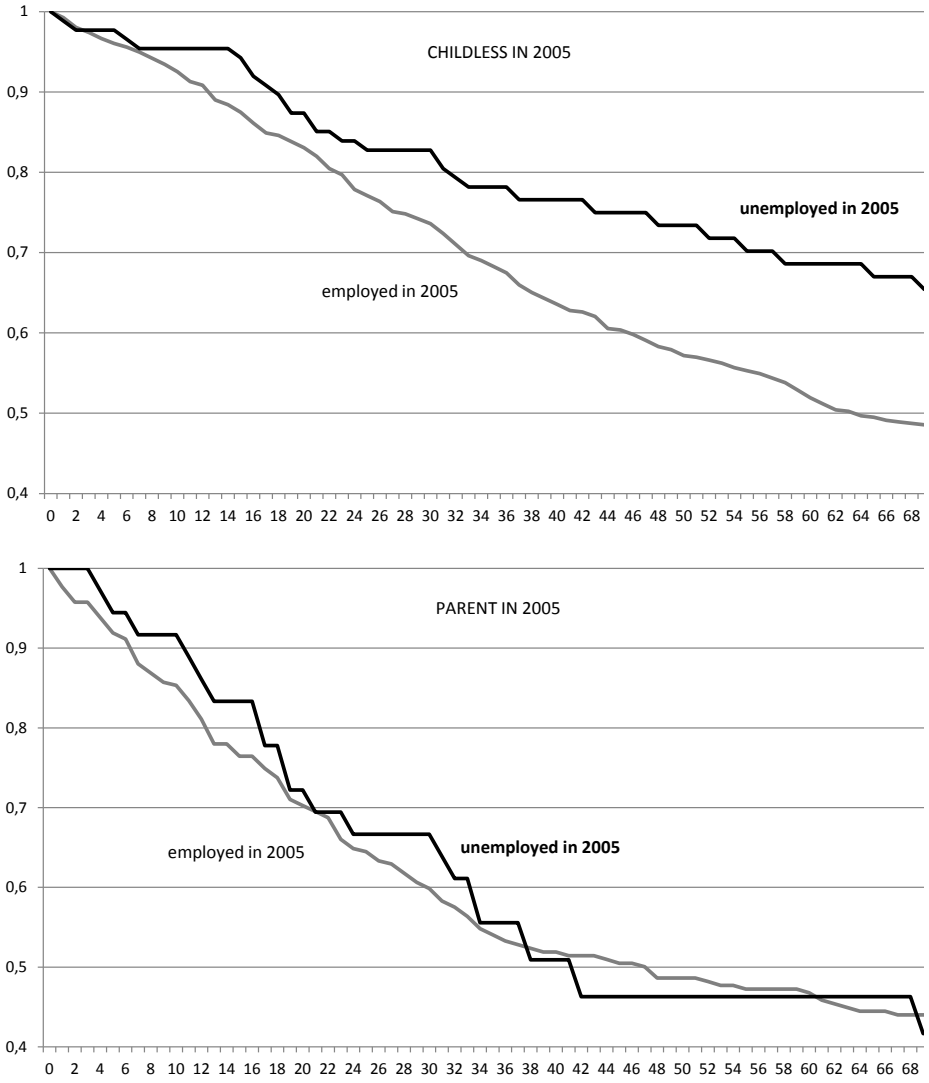
2. Lesser realization of fertility intentions among respondents who were childless and unemployed at the time of the first wave

On the basis of longitudinal data, we can measure the probability of having a child over time (survival curves) among persons who in 2005 had expressed the desire to have a child ("during the next three years" or "later"), according to their employment status in 2005 (employed or unemployed). As in the case of fertility intentions, whose logic differs according to the number of children already born, the birth of a child came more slowly, and was also less likely to happen within six years, among persons who were childless and unemployed in 2005 than among those who were employed at the time[11] (**Figure 2**,

[11] The results by sex (not presented here because the numbers of respondents were too low) nevertheless suggest a more marked difference in behavior in men, with unemployed men less likely to have a first child during the period than employed men.

"childless in 2005"). For example, after three years, a third of employed respondents had had a child (33%), versus fewer than one in four unemployed respondents (22%). In contrast, the decision to have a second child was not determined by occupational status; moreover, it occurred more quickly and was more likely to occur (by the end of the observation period) than the birth of a first child.

Figure 2. Probability of not having initiated a pregnancy as a function of time (2005-2011) by occupational status in 2005 (*Kaplan-Meier*)



Source: Ined-Insee, ERFI-GGS1-3, 2005-2011

Scope: employed and unemployed respondents of childbearing age in 2005, with the intention to have a child within three years or later (including "do not know") and having responded to at least two survey waves (2005 and 2008, 2005 and 2011, or 2005, 2008, and 2011)

Interpretation ("CHILDLESS IN 2005, employed in 2005" curve): among respondents who were employed and childless in 2005, and who intended to have a child (within three years or later), 91% had not initiated a pregnancy 12 months after the first survey wave; 49% after 69 months (5 years and 9 months)

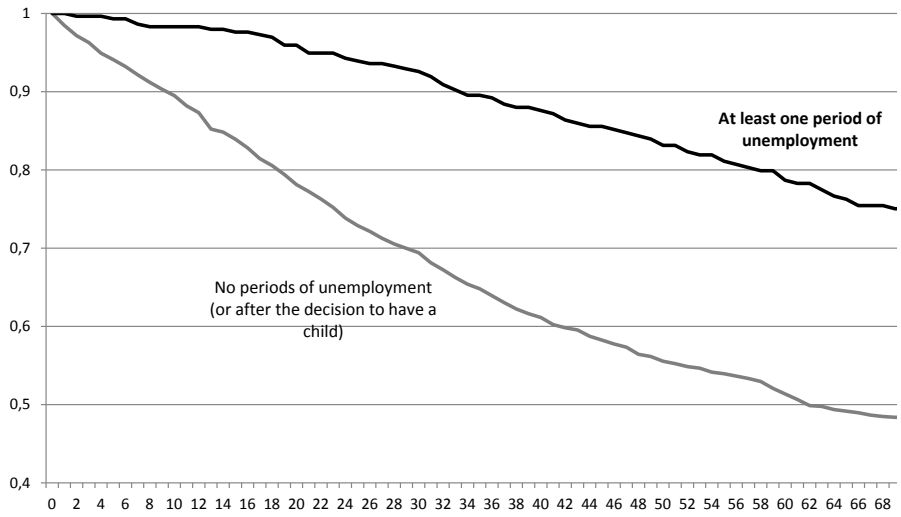
3. Having experienced a period of unemployment after 2005 delayed the realization of a fertility project

Persons who were unemployed in 2005 may have found a job very quickly, whereas those who were employed in 2005 may have subsequently experienced one or more periods of unemployment. In order to study the effect of these unforeseen occupational events, we used the retrospective employment calendar to determine whether or not the person had been through a period of unemployment before deciding to have a child or, in the absence of a pregnancy, until the end of the observation period (**Figure 3**). Here the effect of unemployment appears even more clearly: after three years, more than a third of those who had not experienced any periods of unemployment had had a child (36%), versus only one in ten (11%) of those who went through at least one period of unemployment.[12] After six years, more than half of those who had not gone through any periods of unemployment had had a child, versus only a quarter of those who had.

Taking into account the person's sex and number of children (including ongoing pregnancies) at the time of the first wave did not reveal any very marked differences. Deciding to have a first child (**Figure 4a**) was less frequent and less probable after six years of observation than deciding to have a second child (**Figure 4b**), regardless of the respondent's sex or of whether or not the respondent had experienced any periods of unemployment. Unemployment delayed and limited the arrival of a child between 2005 and 2011, regardless of rank; and, generally speaking, men seem to have realized their fertility intentions slightly less often than women.

[12] Here we do not take into account the amount of time spent unemployed (number of months of unemployment between the first wave and the decision to have a child or the end of the observation period), but longer periods of unemployment may be associated to greater delays before having a child (we return to this point below).

Figure 3. Probability of not having initiated a pregnancy as a function of time (2005-2011) by experience of unemployment since 2005 (*Kaplan-Meier*)

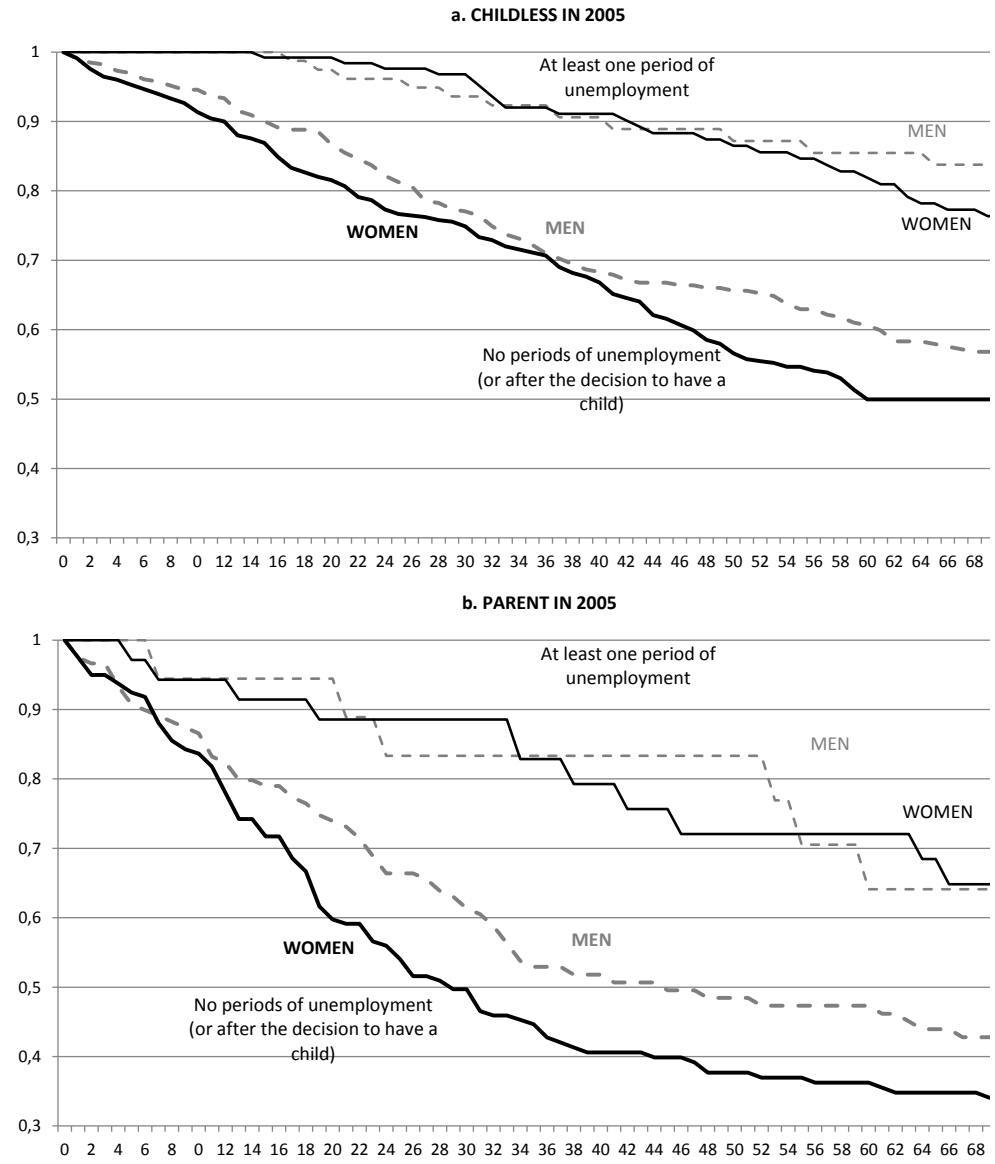


Source: Ined-Insee, ERFI-GGS1-3, 2005-2011

Scope: respondents of childbearing age, with the intention to have a child within three years or later (including "do not know") and having responded to at least two survey waves (2005 and 2008, 2005 and 2011, or 2005, 2008, and 2011)

Interpretation: among persons who in 2005 intended to have a child (within three years or later) and who did not experience a period of unemployment during the first 12 months of observation, 87% had not initiated a pregnancy 12 months after the first survey wave.

Figure 4. Probability of not having initiated a pregnancy as a function of time (2005-2011) by experience of unemployment since 2005 (*Kaplan-Meier*)



Source: Ined-Insee, ERFI-GGS1-3, 2005-2011

Scope: respondents of childbearing age, with the intention to have a child within three years or later (including "do not know") and having responded to at least two survey waves (2005 and 2008, 2005 and 2011, or 2005, 2008, and 2011)

Interpretation: among persons who in 2005 intended to have a child (within three years or later) and who had not been through a period of unemployment during the first 12 months of observation, 87% had not begun a pregnancy 12 months after the first survey wave.

Many other characteristics can influence the timing and intensity of births. The realization of intentions is closely linked, for example, to their firmness, and to the person's conjugal status, age, and level of education (see, e.g., Toulemon and Testa, 2005 ; Régnier-Loilier and Vignoli, 2011). The next task is to measure the specific effect of a period of unemployment on the realization of fertility intentions, once these characteristics have been taken into account.

III. "All other things being equal" approach

1. Unemployment delayed the arrival of the first child...

After age, immigrant status, level of education, location, religious practice, and degree of fertility intention had been taken into account, the effect of unemployment remained significant: experiencing a period of unemployment significantly delayed the decision to have a first child (**Table 2**, Model 1). This negative effect of unemployment on the arrival of a first child applied to both men and women, with comparable intensity. A model estimated on the population as a whole additionally including an indicator for sex and an interaction between sex and unemployment did not reveal a significant difference in the effect of unemployment by sex (**Appendix 3**).

However, for men, once conjugal status (**Table 2**, Model 2) was introduced, experiencing a period of unemployment no longer had a significant negative effect on the decision to have a first child. For men, then, unemployment had a negative effect on union formation, but for a given conjugal status and level of fertility intention, it did not lead to a delay in their decision to have a child. In women, however, taking conjugal status into account did not modify the specific effect of unemployment. Women who wished to have a child significantly delayed their project if they became unemployed.

The same results were observed for the cumulative number of months spent in unemployment, rather than unemployment in a given month (**Table 2**, Model 3): the accumulation of months of unemployment set back the first birth for women, but had no effect in men, unless conjugal status was not controlled for.

Being a student also set back the decision to have a first child, for both men and women (**Table 2**, Model 1). This effect persisted in men after conjugal status was taken into account, whereas in women it was no longer significant. For women, then, being a student and union formation were strongly connected.

As Régnier-Loilier and Vignoli (2011) had already demonstrated on the basis of the first two waves of the French and Italian GGS surveys, the probability of entering into parenthood is tightly linked to the degree of fertility intention (see also **Table 1**). The firmer the intentions, the better their chances of being realized within 6 years. Finally, once the degree of fertility intention as well as conjugal and occupational status had been taken into account, few other elements affected the realization of fertility intentions. Age had a very marked effect, notably for women, partly due to lesser fertility with increasing age[13] (Leridon, 2004), but also due to representations of the age after which having a child is no longer desirable

[13] A woman seeking to have a child toward age 30 has a 75% chance of succeeding within 12 months; the probability is 66% if she begins at age 35, and 44% if she begins at age 40. The risk of not succeeding at all in these cases is 8%, 15%, and 36% respectively (Leridon, 2004).

(Toulemon and Leridon, 1999). Being an immigrant positively affected the arrival of a child, particularly after conjugal status was controlled for. In contrast, level of education did not influence the realization of fertility intentions. It had an indirect effect, however, through the difference in the risk of unemployment with level of education.

2. ...but not the second

The decision to have a second child depended very little on the explanatory factors examined here, notably for men (**Table 3**, Model 2). However, in men, the cumulative number of months of unemployment had a negative effect on the birth of a second child. In women, unemployment no longer had any effect, either at time T (Model 2) or cumulatively (Model 3). It is true that the risk of unemployment is lower after the ages of 25 to 30, once the first child is born.[14] Moreover, having had a first child tends to stabilize men's careers: their risk of unemployment decreases after the birth of a first child (Orain, 2004). However, when unemployment did occur at this stage in the life cycle, and lasted, this led to a redefinition of fertility projects. For men, then, it was more the persistence of unemployment than its occurrence that affected the realization of fertility intentions.

Likewise, there is a negative correlation between youth unemployment and the rate of first union formation (Prioux, 2003). Thus, as we have seen, the observed relationship between occupational status and the timing of the arrival of a first child is partly attributable to conjugal status. But this effect is no longer present for the following birth, as the couple has already formed.

As for the first birth, the second depended on age, for women, and on conjugal status. Degree of fertility intention had a lesser effect than on the first birth: the effect was not significant in men, and in women, intentions were more likely to be realized in a relatively short period when they were firm. Women who in the first wave reported that they wished to have a second child "probably later" were not less likely to have one than those who reported wanting one "during the next three years." These mothers who were uncertain at the time of the first wave probably included both women who had doubts on the timing of the arrival of their second child and others who were unsure about having a second child at all. Finally, while level of education did not affect the probability of having a first child, it did affect the chances of having a second. Women who had completed short post-secondary programs were more likely to have a second child than either high school graduates or women who had undertaken longer periods of higher education. With lesser qualifications than the latter group, but with qualifications that nevertheless offered them sufficiently high levels of income, they most likely occupied positions with lesser responsibilities which allowed them to move on more quickly to having a second child.

[14] In our sample, 24% of persons with no children in 2005 went through a period of unemployment between 2005 and 2011, versus 18% of parents.

Table 2. Probability of having initiated a pregnancy between 2005 and 2011 (Cox duration model)

		MEN						WOMEN					
		Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
AGE		0,46	***	0,05	-	0,06	-	0,77	***	0,60	***	0,55	***
Age²		-0,01	***	0,00	-	0,00	-	-0,02	***	-0,01	***	-0,01	***
IMMIGRANT STATUS	No	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	Yes	0,40	-	0,39	-	0,38	-	0,86	***	1,12	***	1,11	***
EDUCATION	no qualifications	0,13	-	0,22	-	0,21	-	0,01	-	-0,03	-	-0,09	-
	CAP, BEP	0,13	-	0,22	-	0,21	-	-0,49	**	-0,38	-	-0,31	-
	Baccalauréat	0,14	-	0,11	-	0,10	-	-0,23	-	-0,05	-	-0,01	-
	2 yrs higher ed.	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	> 2 yrs higher ed.	0,35	-	0,21	-	0,22	-	0,11	-	0,07	-	0,06	-
STUDENT at time T (1 to 72)	No	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	Yes	-2,36	***	-2,03	***	-1,99	***	-0,57	**	-0,37	-	-0,42	-
UNEMPLOYED at time T (1 to 72)	**No**	**0,00**	**ref**	**0,00**	**ref**			**0,00**	**ref**	**0,00**	**ref**		
	Yes	**-0,80**	**	**-0,14**	-			**-1,07**	**	**-1,11**	**		
Cumulative number of months of unemployment						**0,02**	-					**-0,08**	***
URBAN UNIT SIZE	rural, < 5000inh.	0,37	*	0,21	-	0,00	-	-0,03	-	-0,10	-	0,00	-
	from 5000 to 200,000	0,27	-	0,30	-	0,22	-	0,03	-	-0,03	-	-0,04	-
	more than 200,000	0,00	ref	0,00	ref	0,28	ref	0,00	ref	0,00	ref	0,00	ref
	Urban unit of Paris	0,30	-	0,27	-	0,00	-	-0,28	-	-0,23	-	0,00	-
RELIGIOUS PRACTICE	none	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	<1/ every two months	0,06	-	0,13	-	0,14	-	0,20	-	0,19	-	0,17	-
	every two months or more	0,03	-	0,29	-	0,27	-	0,19	-	0,11	-	0,09	-
FERTILITY INTENTION in 2005	Yes within 3 years	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	Yes probably within 3 years	-0,94	***	-0,80	***	-1,48	***	-0,55	***	-0,37	**	-1,51	***
	Probably yes later	-1,37	***	-1,48	***	-0,81	***	-1,89	***	-1,53	***	-0,34	**
IN A UNION at time T	No			0,00	ref	0,00	ref			0,00	ref	0,00	ref
	Yes			2,15	***	2,23	***			1,88	***	1,93	***
RESPONDENTS (%)	Had a child	153	*36,3*	153	*36,3*	153	*36,3*	267	*44,4*	267	*44,4*	267	*44,4*
	Did not have a child	268	*63,7*	268	*63,7*	268	*63,7*	334	*55,6*	334	*55,6*	334	*55,6*

Source: Ined-Insee, ERFI-GGS1-3, 2005-2011

Scope: respondents who were childless and of childbearing age, with the intention to have a child within three years or later (including "do not know") and having responded to at least two survey waves (2005 and 2008, 2005 and 2011, or 2005, 2008, and 2011)

Interpretation: a positive (/negative) and statistically significant β parameter indicates a factor that speeds (/slows) the arrival of the first child, all other things being equal. The further this parameter's value is from 0.00, the greater the impact of the factor.
*Legend: ref. = reference situation; - = non-significant factor; * = sign. at the 10% level; ** = at the 5% level; *** = at the 1% level.*

Table 3. Probability of having initiated a second pregnancy between 2005 and 2011 (Cox duration model)

		MEN				WOMEN			
		Model 2		Model 3		Model 2		Model 3	
AGE		0,11	-	0,22	-	0,61	*	0,64	**
Age²		0,00	-	0,00	-	-0,01	**	-0,01	**
IMMIGRANT STATUS	No	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	Yes	0,44	-	0,25	-	0,13	-	0,18	-
EDUCATION	no qualifications	0,52	-	0,49	-	-0,39	-	-0,49	-
	CAP, BEP	-0,41	-	-0,42	-	-0,38	-	-0,40	-
	Baccalauréat	0,28	-	0,31	-	-0,63	**	-0,64	**
	2 yrs higher ed.	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	> 2 yrs higher ed.	0,54	-	0,54	-	-0,58	*	-0,58	*
UNEMPLOYED	**No**	0,00	ref			**0,00**	**ref**		
at time T (1 to 72)	**Yes**	0,08	-			**-0,70**	**-**		
Cumulative number of months of unemployment				0,07	**			0,01	-
INACTIVE	No					0,00	ref	0,00	ref
at time T (1 to 72)	Yes					0,31	-	0,39	-
URBAN UNIT SIZE	rural, < 5000inh.	-0,16	-	-0,22	-	-0,13	-	-0,12	-
	from 5000 to 200,000	-0,13	-	-0,21	-	0,45	-	0,47	-
	more than 200,000	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	Urban unit of Paris	0,34	-	0,23	-	0,37	-	0,39	-
RELIGIOUS PRACTICE	none	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	<1/ every two months	-0,06	-	-0,09	-	-0,30	-	-0,25	-
	every two months or more	-0,21	-	-0,19	-	-0,49	-	-0,54	-
FERTILITY INTENTION in 2005	Yes within 3 years	0,00	ref	0,00	ref	0,00	ref	0,00	ref
	Yes probably within 3 years	-0,36	-	-0,45	-	-0,75	*	-0,80	**
	Probably yes later	-0,15	-	-0,30	-	-0,09	-	-0,04	-
IN A UNION	No	0,00	ref	0,00	ref	0,00	ref	0,00	ref
at time T	Yes	1,29	***	1,24	**	1,09	***	1,17	***
RESPONDENTS (%)	Had a child	62	*49,6*	62	*49,6*	93	*56,0*	93	*56,0*
	Did not have a child	63	*50,4*	63	*50,4*	73	*44,0*	73	*44,0*

Source: Ined-Insee, ERFI-GGS1-3, 2005-2011

Scope: respondents who had a child and were of childbearing age, with the intention to have a child within three years or later (including "do not know") and having responded to at least two survey waves (2005 and 2008, 2005 and 2011, or 2005, 2008, and 2011)

Interpretation: a positive (/negative) and statistically significant β parameter indicates a factor that speeds (/slows) the arrival of the second child, all other things being equal. The further this parameter's value is from 0.00, the greater the impact of the factor.
*Legend: ref. = reference situation; - = non-significant factor; * = sign. at the 10% level; ** = at the 5% level; *** = at the 1% level.*

Conclusion

The prospective data from the ERFI survey (2005, 2008, and 2011), which include a precise dating of changes in employment status (including unemployment) and births, offer the opportunity to measure the effects of a period of unemployment on the realization of fertility projects in France in recent years. Whereas cross-sectional data only allow the estimation of the effect of unemployment on intentions at a time T, and retrospective data only allow the comparison of fertility behavior and occupational trajectory independently of past projects[15] and for earlier periods, this survey's long-term (six-year) follow-up with the same set of individuals who expressed the wish to have a child make it possible to study the effects of unemployment on their fertility behavior.

Our results show that the frequency of having children during the observation period was lower among those who experienced an episode of unemployment. However, the effect of

[15] It is not possible to determine a person's fertility intentions three, five, or ten years earlier through an interview.

unemployment differed by sex and birth rank (first or second child). Unemployment's negative effect on entry into parenthood was greater in women than in men, after controlling for conjugal status. For men, in contrast, the arrival of a first child was delayed most of all either by being a student or by a delayed entry into union—both of which could be consequences of unemployment. As the data include only the respondent's occupational trajectory, and not that of the respondent's partner, we cannot conclude that women's unemployment had a greater impact than men's (or vice versa) on entry into parenthood. Doing so would require being able to control for the partner's occupational trajectory. In practice, this would require longitudinal interviewing of both members of the couple, requiring an extremely onerous survey protocol.

The logic of the arrival of a second child was considerably different. Having a second child is very frequent in France (the ideal family includes at least two children) and decisions about it are made notably (but not exclusively) according to the desired spacing between children. Thus, going through a period of unemployment (regardless of its duration) did not affect the realization of either women's or men's projects in this case. For the latter, however, increasing amounts of time in unemployment negatively affected the arrival of a second child.

Insofar as the economic crisis has affected both the number of people who are unemployed and the amount of time that they spend in unemployment, it could thus lead to a delay in the timing of both first and second births, which could account for a portion of the recent drop in fertility.

In the context of a strongly predominant "procreative norm" (Bajos and Ferrand, 2006), where entry into parenthood is preceded by a set of preconditions that couples set for themselves which include material stability, the ongoing economic crisis in France may have two consequences, possibly in combination: a weakening of the norm (with couples reducing their material "demands" before deciding to have a child), or a delay in, or even the abandonment of, the project of having a child, notably among older individuals. The effect of unemployment on the timing of fertility shown here indicates that couples continue to attach considerable importance to material conditions before having a child.

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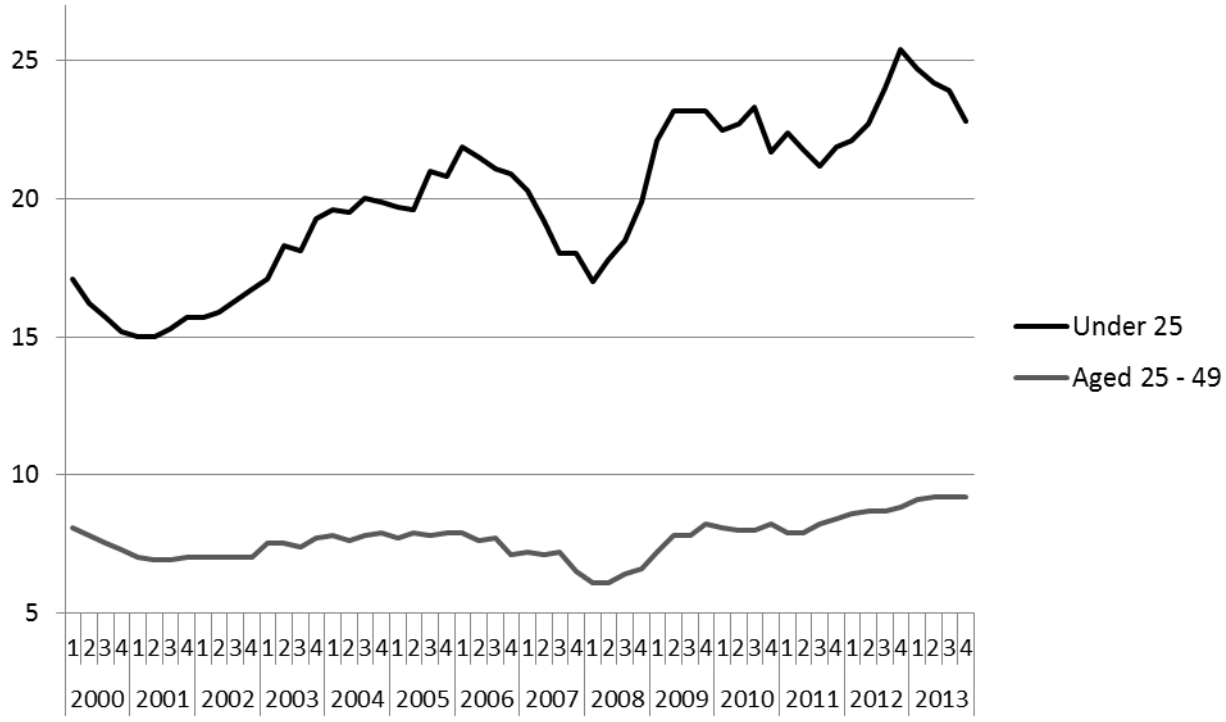
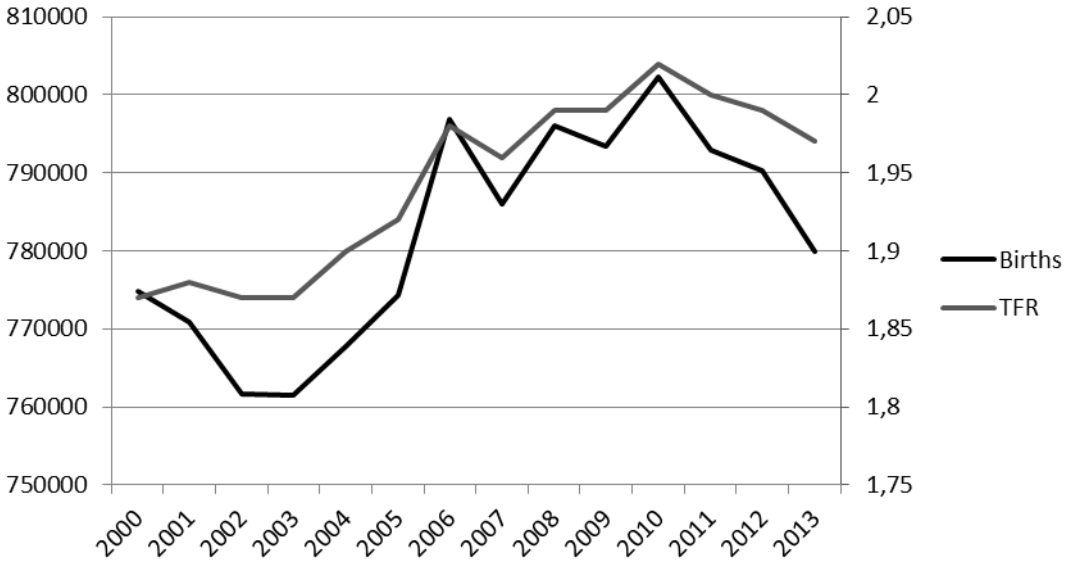
APPENDICES

Appendix 1. Unemployment rate (ILO definition), by age, 2000-2013



Source: INSEE, Continuous employment survey - seasonally adjusted data - Metropolitan France

Appendix 2. Fertility, 2000-2013



Source: INSEE, vital statistics – Metropolitan France

Appendix 3. Probability of having initiated a first pregnancy between 2005 and 2011, for men and women combined (Cox duration model)

		Model without interaction		Model with interaction	
SEX	Woman	0,24	**	0,25	**
	Man	0,00	ref	0,00	ref
AGE		0,48	***	0,48	***
Age²		-0,01	***	-0,01	***
IMMIGRANT STATUS	No	0,00	ref	0,00	ref
	yes	0,57	***	0,57	***
EDUCATION	no qualifications	-0,07	-	-0,06	-
	CAP, BEP	-0,17	-	-0,17	-
	Baccalauréat	-0,04	-	-0,04	-
	2 yrs higher ed.	0,00	ref	0,00	ref
	> 2 yrs higher ed.	0,17	-	0,18	-
STUDENT at time T (1 to 72)	No	0,00	ref	0,00	ref
	Yes	-1,06	***	-1,06	***
UNEMPLOYED at time T (1 to 72)	No	0,00	ref	0,00	ref
	yes	-0,98	***	-0,76	*
SEX-UNEMPLOYMENT INTERACTION				-0,46	-
URBAN UNIT SIZE	rural, < 5000inh.	0,19	-	0,19	-
	from 5000 to 200,000	0,13	-	0,12	-
	more than 200,000	0,00	ref	0,00	ref
	Urban unit of Paris	-0,06	-	-0,07	-
RELIGIOUS PRACTICE	none	0,00	ref	0,00	ref
	<1/ every two months	0,11	-	0,11	-
	every two months or more	0,05	-	0,05	-
FERTILITY INTENTION in 2005	Yes within 3 years	0,00	ref	0,00	ref
	Yes probably within 3 years	-1,54	***	-1,54	***
	Probably yes later	-0,68	***	-0,68	***
RESPONDENTS (%)	Had a child	420	*41,1*	420	*41,1*
	Did not have a child	602	*58,9*	602	*58,9*

Source: Ined-Insee, ERFI-GGS1-3, 2005-2011

Scope: respondents of childbearing age, with the intention to have a child within three years or later (including "do not know") and having responded to at least two survey waves (2005 and 2008, 2005 and 2011, or 2005, 2008, and 2011)

Interpretation: a positive (/negative) and statistically significant β parameter indicates a factor that speeds (/slows) the arrival of a first child, all other things being equal. The further this parameter's value is from 0.00, the greater the impact of this factor.
*Legend: ref. = reference situation; - = non-significant factor; * = sign. at the 10% level; ** = at the 5% level; *** = at the 1% level.*