D 4.11

Country specific analyses for other countries[1]

The report is summarised and written by
Zsolt Spéder
(Demographic Research Institute, Budapest)

With contributions from:

Blaskó, Zsuzsanna (Demographic Research Institute, Budapest)
Dimitrova, Elisa (Co-ordination Research Centre for Social Research at the BAS)
Kapitány, Balázs (Demographic Research Institute, Budapest)
Iacovou, Maria (Insitute for Social and Economic Research at the University of Essex, Colchester)
Pailhe, Arian (Institut national d'études Démographiques, INED, Paris)
Solaz, Ann (Institut national d'études Démographiques, INED, Paris)
Tavares, Lara (Insitute for Social and Economic Research at the University of Essex, Colchester)

[1] Non-language-edited version.

Table of contents

I. Overview and introduction

1. The framework

The central objective of the REPRO project is to gain deeper insights into the processes underlying the changes in European fertility behaviour, and to generate new scientific information and policy-oriented knowledge on the factors that drive changes in birth rates and influence the reproductive decision-making of contemporary Europeans. Two of the Work Packages (WPs) conduct macro-level analysis, and three of them use micro-level approaches. Two of the micro approaches, those in WP3 and WP4, are closely linked and based on a common theory, the Theory of Planned Behavior developed by Icek Ajzen (Ajzen 1988). WP3 concentrates on the *formation of intentions* (see Figure 1), and WP4 researches the realization of intentions, i.e., the second phase of fertility decision according to Ajzen's model. This division of tasks legitimates that those contributing to WP4 focuses on the realization of fertility intentions, and only marginally deal with the issue of emerging intentions.

Figure 1.
Division of tasks according the underlying theoretical fertility decision-making concept
"Theory of Planned Behaviour" developed by I. Ajzen

3
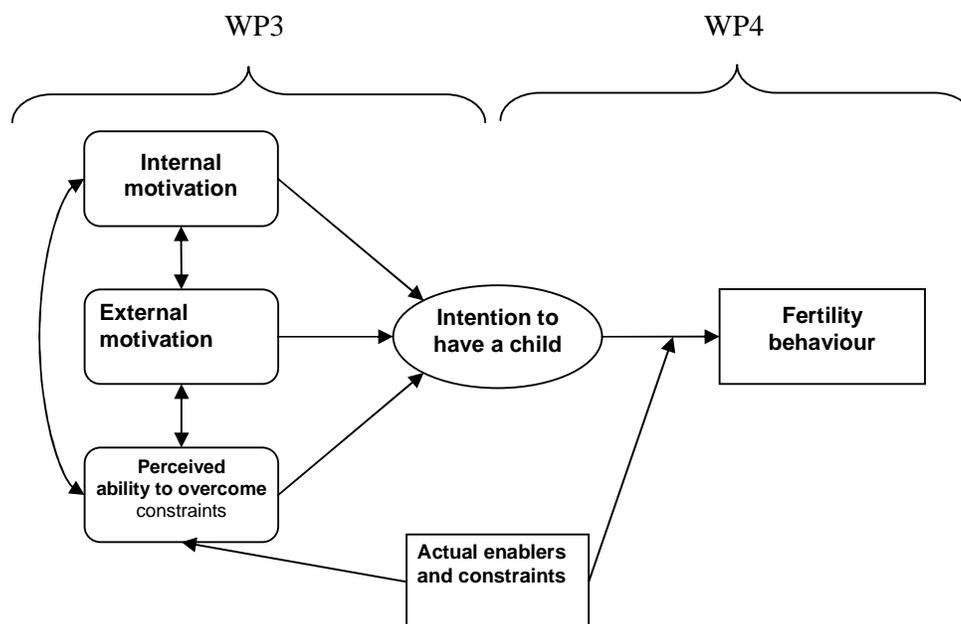
Since this approach requires information about intentions at a given time, and about whether or not these intentions were realized later, the analysis of this 'second phase' of decision making *concentrates on follow up/longitudinal panel studies*. For this reason, one of the objectives of WP4 is to gather information about European panel studies, and to find out whether questions of fertility intentions and their realization are included in the integrated data sets. Furthermore the available studies should be analyzed, and factors affecting realization and non-realization of intentions should be identified.

2. Work done between the 13th and 18th months

During these six months, the participating institutes directed their activities on two types of activities.

A) Enlarging the comparative analysis. The researchers at the Demographic Research Institute Budapest (DRI), aimed to collect independently run panel surveys that could be subject of harmonization, for the sake of further comparative analyse. They obtained four longitudinal surveys. These are:

- The Hungarian 'Turning Points of the Life Course' 1st and 2nd waves (that was available in the institute),
- The Dutch 'Netherlands Kinship Panel Study' 1st and 2nd waves
- The Swiss 'Swiss Household Panel Survey', 6th and the 9th waves,
- The French longitudinal survey "Les intentions de fécondité" 1st and 2nd waves

After surveying the questionnaire-programs, taking into consideration the panel-mortality, the DRI decided, that three surveys (the Dutch, the Swiss and the Hungarian) could be harmonized for an extended analysis. These surveys contain questions about intentions which were suitable for harmonisation, and they had sufficiently low attrition to carry out the intended analysis. During the reported time the harmonization was done, and modelling carried out. The *Kapitány, Spéder* draft comparative study (*section 1*) reports about the results of the harmonizing and modelling work.

B) The institutes involved in Work Package 4 worked according to the planned activities, caring out country analyses. Since they used data-sets that were not suitable for comparison, the strategy of this analysis followed to aims. They attempted to follow the original aim of the Work Package 4 (understanding fertility behaviour at the micro level) on the one side, and

adopt the research question and analytical strategy suitable to the available data set. Three country studies were carried out until the 18 months.

1) The ESSR Essex used 16 waves of the British Household Panel Survey, and focused on understanding changes in family size intentions (expected fertility). They could identify upward and downward changes, and identify factors contributing to these life course changes. (See the extended abstract of *Iacovou and Tavares* research in *section2*).

2) The Bulgarian team enlarged our knowledge about educational differences in the fertility decision process (See the extended abstract of *Dimitrova* in *section3*). The Bulgarian panel-data was analysed in the first 12 month of the project time, and also in the WP3, so the study of Dimitrova could be seen as enriching our knowledge about fertility decisions.

3) Because of many weakness of the French "Les intentions de fécondité" survey, the colleagues of the INED used the very recent *Family and Employer survey* and concentrated their interest to the relation of labour market uncertainty and fertility intentions and outcomes. The draft study from *Pailhé and Solaz* in *section 4* use three different modelling strategies to capture three different fertility variables.

All the analyses have their own conclusion; therefore we do not repeat these conclusions here at the beginning.

Over the next 6 months we plan to finalize the studies for publication, and to formulate policy relevant issues on the basis of the results.

II. The realization of time-related fertility intentions. A comparison of the Netherlands, Switzerland and Hungary[2]

By Zsolt Spéder, Balázs Kapitány (Demographic Research Institute, Budapest)[3]

(Draft version – please do not cite.)

Abstract

This study investigates the realization of time-related fertility intentions, using a comparative approach. Three medium size European countries (the Netherlands, Switzerland and Hungary), having rather different level of fertility and pace of postponement, are compared. Using three harmonized longitudinal panel surveys, we are able to frame a typology of fertility intentions and outcomes, and identify country differences in realization of positive fertility intentions. The results indicate that differences in the individual risk of realization are contingent upon the fertility regimes and via versa. Than we turn to explanations: using multinominal logistic regressions we unfold factors influencing realization of intentions, postponement and abandonment of future childbearing. Age, partnership status and education seem to influence fertility intention outcomes in the same way in Netherlands, Switzerland and Hungary. However, the effects of parity and religious denomination differ partly in the three investigated countries.

1. Analytical framework

1.1. Introduction: the research question

Deviation of fertility outcomes from fertility intentions is quite an old and widely known phenomenon. In the modern societies the intended overall number of children usually exceeds both the actual period and the cohort specific measures. It is therefore not surprising, that there is skepticism about the predictive power of fertility intentions (Westoff, Ryder, 1997). Nevertheless, birth intention has remained a permanent, standard element of fertility surveys. Nowadays there are quite large discrepancies in Europe between the desired and actual levels of fertility, between fertility ideals and period fertility achievements (van Peer 2000,

---

[3] Non-edited version.

Goldstein et al. 2004). Divergence is particularly large in countries where fertility levels produced unprecedentedly abrupt drops.

In the age of postponement, research into fertility intentions must proceed with caution: on the one hand, a wide gap between the average intended number of children and the total fertility rate *should be* present. On the other hand, the concept of postponement may suggest that the final number of children will eventually approach the intended number of children of the various cohorts (cf. Sobotka, 2004).

In order to overcome these well-known macro-distortions (cf. Bongaarts, Feeney, 2000) we limit ourselves to *longitudinal panel analyses*: firstly we will report the literature of fertility intentions if using longitudinal panel analyses. Secondly we will use longitudinal panel surveys to answer the research questions we have posed.

1.2. Fertility intentions and their realization

Opinions in the literature referring to longitudinal panel surveys differ regarding the predictive value and strength of influence of intentions on fertility behavior. Critical approaches stress that intentions alone have no (or hardly any) role in determining fertility behaviors; they are more properly seen as mediators (Westoff and Ryder, 1977, Toulemon, Testa 2005). Other studies, however, reach the opposite conclusion: the explanatory power of intentions is exceptionally high and intentions are independent factors determining fertility behavior (Schoen et al. 1999; Berrington, 2004), not just mediating factors. In order to avoid drawing premature conclusions, it is necessary to examine whether the different studies use the same concept of intentions, and if not, what kind of conceptual differences they have. As well as these indicators, we should also critically examine the criteria by which success is measured, since the predictive value of intentions probably depends on the conceptualization of these criteria.

The literature so far reviewed by us which uses longitudinal panel surveys, posits at least five different concepts of intentions:

(1) *intended* (expected) *family size*,

(2) *intention* to have (any more) children *at all*

(3) the intention to have a(nother) child *within a given time period*

(4) the *degree of certainty* of the childbearing intention and

(5) whether *the intentions of the partners* coincide.

The assessment of the role of intentions in fertility research may be summarized according to the types of intentions mentioned before, as follows:

(1) The longitudinal study of the relationship between intended family size and observed fertility clearly indicates that (individual) completed fertility involves a considerable under-realization as well as over-realization of intentions (Quesnel-Vallée and Morgan, 2003). Reports from France (Monier 1989) and Hungary (Kamarás and Szukics 2003) also document overestimations of future family size (under-realization of intentions). Liefbroer, who discusses this question in detail, reports not only downward (and upward) adjustment of family size intentions but also identifies factors and mechanisms – such as changes in partnership and activity status, fertility events and aging – that contribute to changes in individual family size intentions (Liefbroer, 2008).

(2) Contrary conclusions are reached in studies of the intention to have (any more) children *at all* (Westoff and Ryder, 1977; Schoen et al. 1999; Berrington 2004). While Westoff and Ryder have fundamental doubts about the independent influence of intentions, they are quite manifest for Berrington. Furthermore, Schoen et al. explicitly advocate the additional predictive power of intentions: "Intentions to have or not to have a child or another child and the certainty of those intentions for future childbearing are strongly and consistently related to future fertility behavior." (Schoen et al. 1999: 798).

(3) There is no consensus concerning the effects of *time-dependent intentions* that are central for our study. According to Schoen et al, if the intention is for the "foreseeable future" (in their case, within 4 years) then it has a significant impact on fertility behavior. On the contrary, Westoff and Ryder found that intentions for the subsequent two-year period are not highly predictive of realizations within that two-year period but are indicative of the likelihood of childbearing in the more distant future. Toulemon and Testa arrive at a similar negative conclusion, possibly because they found a high rate (58.5%) of uncertainty among their respondents (Toulemon and Testa 2005).

(4) There is a clear consensus about the effect of the *certainty* of intentions. All previous research has underscored that certainty of intentions contribute to predicting the next childbearing to a great content (Westoff and Ryder, 1977; Schoen et al. 1999, Philipov and Testa, 2007).

(5) Studies examining the opinion of *partners* are mostly in agreement when they conclude that the intention of the partner is (also) important. If there is no agreement of intentions between the partners, it is less likely that the respondent will realize his/her fertility intention (Thomson 1977; Schoen et al. 1999; Philipov and Testa, 2007).

At this time of fertility postponement, the study of time-dependent fertility intentions is highly justifiable, though research questions must be formulated in a way to suit the particular situation: have people who planned to have children within 1/2/3 years succeeded in realizing their intentions within the specified time period? Have those who failed to realize their plans within their particular period of time abandoned them altogether or do they still maintain their childbearing intentions? Can we identify the factors that facilitate or hinder the realization of time-dependent fertility intentions?

1.3. The research question and the dependent variable

Our investigation concentrates on time-dependent intentions, and considers also whether failed intentions will be maintained or abandoned. We investigate whether a positive fertility intention, the intention to have a(nother) child within two years, will succeed or not. The fact that the length of intention and the time period for realization do not match is due to the limitations of the different surveys.[4] Those who intended to have a child within three years and successfully realized this intention were called "*intentional parents.*" We were also interested how "revisable" are those intentions that could not be realized. We divided the people who intended to have a child within two years but failed for some reason, into two groups: one group for those who maintained their intention to have children at the subsequent wave whom we called "*postponers",* and another group who abandoned their plans, called "*abandoners*." These distinctions provide us with an opportunity to understand the reasons for unsuccessful realization and allow us a glimpse into the mechanism of postponement. The table below shows the logical construction of our crucial variable. (The limitation of our comparison will be discussed later in length.)

Basic types of positive fertility intentions and outcomes

Fertility intention-outcome Types	Fertility intention within **two** years (at the 1st wave)	Had a birth within **three** years (between the 1st and 2nd waves)	Intend to have a child at subsequent wave
Intentional parents	Yes	Yes	
Postponers	Yes	No	Yes
Abandoners	Yes	No	No

---

[4] A great deal of research results support our way of handling this issue. Since the realization of intentions is strongly corrrelated with the time frame (cf. Shoen, et al., 1989), and short-run intentions could also be understood as „strong", or „involved" intentions, we belive that this way of handling the matter is legitimate.

1.4. The demographic context: postponement

Postponement is an unavoidable phenomenon and concept in the discussion of fertility change and childbearing behavior today in Europe. Europe has been characterized for decades by an increasing age of mothers at first and subsequent birth. This process started in Western Europe in the mid-1960s, and started soon after the political upheaval in 1989 (cf. Lesthaeghe, 2001, Billari, et al., 2006). Postponement is characteristic also in the new millennium, during the time of our investigation (between 2002 and 2007), although the extent of postponement is strongly different among countries. The extent of postponement is usually measured by the mean age of mother at the first birth (MAFB). It is well known that postponement strongly influences period fertility measures, namely the Total Fertility Rate (Bongaarts, Feeny, 1998). Adjusted fertility rates that try to counterbalance timing distortions clearly make us expect higher cohort fertility rates (Bongaarts, Feeny, 1998, Sobotka, 2004).

1.5. Postponement and realization

Less attention is given to the relationship between individual childbearing[5] behavior and macro-level postponement. The literature on fertility postponement (Bongaarts, Feeney 2000., Lesthaeghe 2001, Sobotka 2004, Billari et al., 2006) does not explicitly pose the question of whether the postponement (increase of the MAFB) is a consciously planned decision by individuals, or whether it is a result of permanent revision of the timing of the first and subsequent children?

On the other side, the literature on intention and realization rarely considers the societal context of the intentions. It does not take into account that non-realization of intentions, or the postponement of intentions, have a quite different meaning in a society having a stable fertility regime, or in a society where individual revisions of the intentions are widely prevalent, in a society where the increase of the MAFB is rapid.

We assume a kind of correlation between individual childbearing behavior and macro level postponement.

---

[5] Speaking about individuals usually means partnership childbearing, but we do not touch the issue partnership agreements and disagreements.

2. The country context: fertility tendencies in the Netherlands, Switzerland and Hungary, 2000-2007

The selection of the compared countries was determined by the availability of suitable longitudinal data-sets. They were only considered if they included time-dependent fertility intention questions, and if these questions could be harmonized.

The Netherlands: The level of fertility is quite high and stable in the European context, and mothers receive their first child at a relatively late age (Fokkema et al., 2008). The Netherlands is also a case, where recuperation in later ages could be identified (Lesthaeghe, 2001), and is an example of increasing fertility after the long decline. It belongs to the exceptional European countries where some anti-aging of fertility happened: around the turn of the century some decrease in mean age at first birth could be identified. During the time of our investigation, between 2004 and 2007, the mean age of mother at birth increased somewhat, by 0.2 years. The total fertility rate (TFR) is high in a European comparison standing above 1.7. These observations indicate that the Netherlands embody an established, stable fertility regime type.

Switzerland: Low and very late (advanced) fertility is characteristic for Switzerland. Furthermore, the mean age of mothers at birth rose continuously. Until around the beginning of the 1990s the mean age of mothers was lower than in the Netherlands, at the time of our investigation, at the mid of the first decade of our century, the mean age of mothers in Switzerland surpassed those in the Netherlands. The mean age at first birth was 29.8 year in Switzerland, which is one of the highest in the world. The mean age of the mothers at birth increased in Switzerland by 0.5 years during the investigated three years (2004-2007). The TFR was around 1.45 at the time of the investigation.

Hungary: The Hungarian fertility transition started at the beginning of the 1990s. In the seven years from 1991 the TFR dropped from 1.84 to 1.3, and since than fluctuated slightly around the level of 1.3. The mean age of mothers at first birth increases permanently since the second half of the 1990s. The fertility transition happened and happens in Central Eastern Europe with a higher pace than in Western Europe. During the investigated period, from 2001 to 2004 the mean age of mothers increased from 25.3 year to 26.3 years. If this postponement distortion would be acknowledged in the calculation of the TFR, the adjusted fertility is as high as 1.75 according the Bongaarts-Feeny formula (Bongaarts, Feeney, 2000).

This very rough description of the countries did not aim at giving a comprehensive account of differences in fertility at the macro level. Our intention was rather to show, that our micro-analyses are embedded in quite different fertility regime settings.

Figure 1.
Mean age of mothers at first birth and all births in the Netherlands, Switzerland and Hungary, 1998-2007
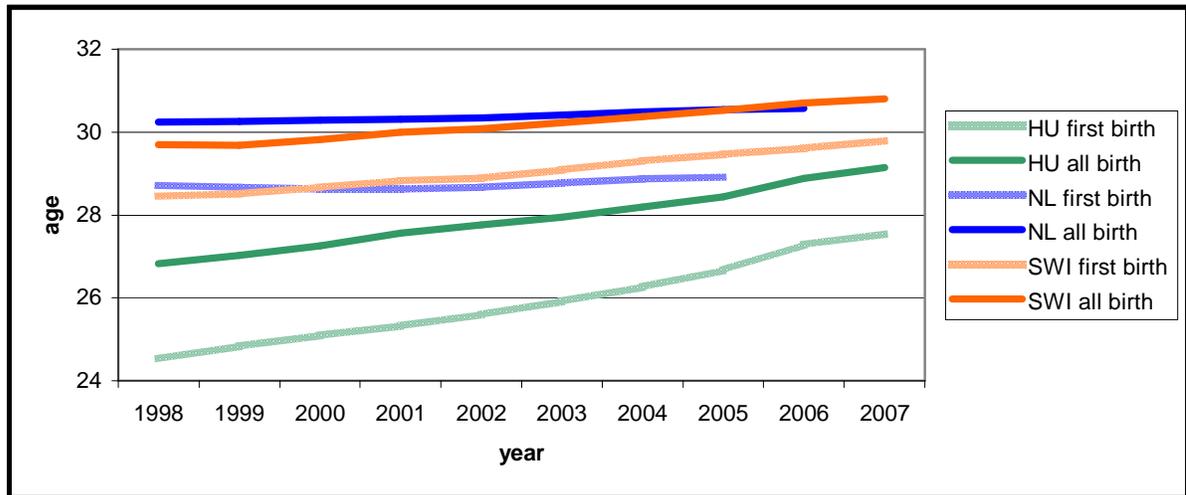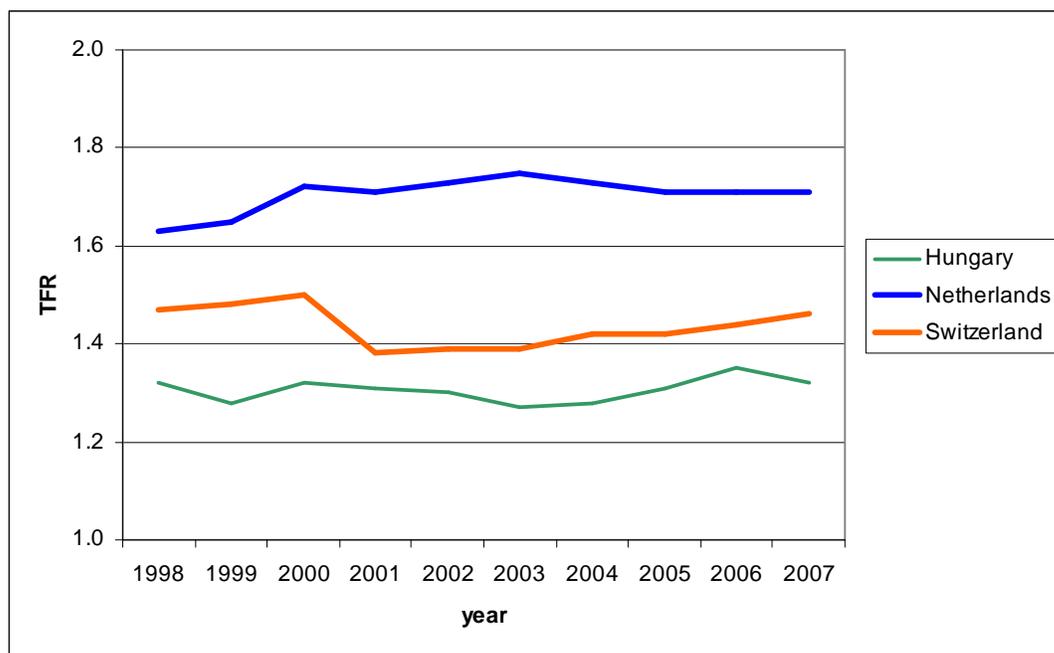

Figure 2.
Total fertility rate in the Netherlands, Switzerland and Hungary, 1998-2007

3. Data and methods

3.1. Data

We use three quite different, but nationally representative large scale longitudinal panel surveys. The Hungarian and the Dutch surveys are more similar: they focus on changes in demographic behavior.[6] We use the first two waves of the Netherlands Kinship Panel Study and the Hungarian Turning Points of the Life Course survey. The time window of the follow up was three years in both cases. In the Swiss survey, in the Swiss Household Panel survey, the follow up is organized yearly, therefore we used the 6th and the 9th wave for our analysis. The main features of the surveys are reported in Table 1 below. The first investigated waves took place between 2002 and 2004, and the subsequent investigated waves between 2005 and 2007. All three surveys were nationally of high priority, special methodological attentions were devoted to them. Although the questionnaire programs of the three surveys were quite different, we are convinced that some questions are suitable for comparison. All three surveys, although in a different way, contain questions on time-related fertility intentions, and give accurate account about births happening between the waves.

Table 1.
Technical information about the surveys

	Hungary	Netherlands	Switzerland
Name of the survey	'Turning Points of the Life Course' (Hungarian GGS survey)	'Netherlands Kinship Panel Survey' (Netherlands GGS survey)	Schweitzer Household-Panel (SHPSI.-SHPSII.)
Fieldwork first wave	2001/2 (1st wave)	2003/4 (1st wave)	2004 (6th wave)
Fieldwork second wave	2004/5 (2nd wave)	2006/7 (2nd wave)	2007 (9th wave)
Non-adjusted panel attrition (including deaths, emigration etc.) between the two waves	17%		
Longitudinal sample size (unweighted N)	13540	6326	
The number of people who intend to have a(nother) child within two years (subsample, unweighted - N)	1056	458	385
Weighting variables	S2_suly	Bweight0	WP07L1S
Weighted subsample	1069	493	409
Description of data, methods, field-work	Kapitany (ed.) 2003 (in Hungarian)	Erikson at all., 2006	Dykstra at all., 2007
Homepage of the surveys	www.demografia.hu	www.nkps.nl	www.swisspanel.ch

---

[6] Both survey will be incorported in the Generations and Gender Surveys (GGS) after harmonisation.

For the sake of our analysis we selected subsamples of the surveys. First we introduced an age limit: we selected females between ages 18 and 45, and males between ages 18 and 50. Among them only persons who intended to have a(nother) child were selected, and only those who were interviewed at the subsequent wave.

Since we deal with three independent surveys, it is not surprising, that the questions on intentions were not framed and worded in the same way (see Table 2 below), but a comparable variable was constructed. Note the two years time window in the Swiss case. Also pregnant women at the time of the interview were handled differently in the three countries. We believe to solve this contradiction by adding parents pregnant at the second wave to intentional parents[7].

Table 2.
Questions on fertility intentions in the three surveys

Hungary	Netherlands	Switzerland
Question wording: **Would like to have additional child(ren)?** *Answers:* 1) Yes 2) Pregnant/partner pregnant 3) No, does not want 4) Cannot have more children 9) Don't know IF YES *At what age would you like to have your next child?*	*Question wording:* **Do you think you'll have {more} children in the future?** *Answers:* 1) Yes 2) No 3) Don't know IF YES **Within how many years would you like to have your {first / next} child? (If pregnant / partner pregnant= 0)**	*Question wording:* **Do you intend to have a child in the next 24 months?** *Answers:* 1) Yes 2) No For pregnant women: not counting the child you are currently pregnant with = another child in addition to the one you are expecting?

3.2. Method

We employed multinominal regression in our analysis. This method was used by Heaton et al. (1999) and Berrington (2004) to study the relationship between fertility intentions and behaviour of childless people. Because our research question is aimed at exploring the gap between intentions and behaviour and at understanding the failure to realize positive intentions, we used the *intentional parents* as a reference group.

---

[7] We wanted to exclude this group from the analysis, but the Swiss data did not allow us to select men whose partner was pregnant at the time of the second interview.

There is no need to describe at length all of the independent variables as they are self-evident from the discussion in the preceding chapter and from the descriptive statistics in the Appendix. Here we only need to point out that age (number of years) and education (number of completed years) are continuous variables.

4. Results

4.1. Basic distributions (and assumption about the process of reproductive decision-making)

The basic distribution of our dependent variable, the fertility intention-outcome variable, reveals basic differences between the countries. The rate of successful realization is quite high in the Netherlands: three out of four people could realize their two years intention within three years. The ratio of realization in Switzerland surpasses only slightly the 50% level. Lastly, in Hungary two fifth of the time-dependent fertility intentions could be realized. This ratio seems to be comparatively quite low. However, this result is in line with the finding of a Bulgarian analysis referring to around the same time. Philipov and Testa showed that 30% of those who (certainly or probably[8]) intended to have a(nother) child within two years could realize their intentions (Philipov, Testa, 2008).[9]

We could make an estimation based on the French longitudinal survey "Les intentions de fécondité".[10] According to these data 54.7 percent of those who intended (certainly or probable) a(nother) child in 1998 could realize their intentions. Among those who failed, around one half (21.3%) intended certainly or probably to have a(nother) child within five years, and the another half (24%) abandoned their fertility intentions.

Concerning failures, one fifth of persons intending to have another child abandoned their fertility plans in Switzerland and Hungary. This is around two times higher than in the Netherlands. The ratios of postponers are also clearly different: in Hungary the ratio of postponers surpasses that of intentional parents. The corresponding figure in Switzerland is also quite high.

One could contemplate about *meaning and causes* of the country differences. We can not completely preclude the possibility, that there are some differences between the countries in the rationality of planning childbearing decision-making. However it is hardly believable,

---

[8] The Bulgarian survey also contains information about the certainty of the intentions.
[9] From this publication we could not get information about handling of the pregnant woman.
[10] We did not include the French data, because a) it had a much higher attrition, b) we could not harmonize the variables used in our modeling.

that in two highly developed countries such as Switzerland and the Netherlands the rationality of acting will differ to such a large extent. We rather tend to assume, that these differences are correlates of shifts in macro level fertility measures.

Until now there is no literature on the individual mechanism of postponement. Studies referred only to the facts that crucial life course events happen in later ages (Lesthaeghe 2001, Sobotka, 2004, Billari, et al. 2006). We were not interested in the question whether these postponements were *voluntary or not*. People intend to give birth later. Reasons are, for instance, higher education, wanting to have a stable job, economic independence, etc. Our results report a different causation: postponement of fertility is a result of the failure to realize childbearing intentions. Macro level postponement is to a great extent the consequence of involuntary postponement. This does not mean that postponement of fertility is not a result of realization of birth in later ages. Although we could not measure it, we assume, this mechanism is also in force. But we argue that non-intended postponement is a crucial element of the *postponement transition*.

Of course in order to have a more accurate picture we should have more information about advanced and unintended births, about dynamics of the formation of intentions, revisions of intentions and about social differences of involvement in planning the childbirth. Nevertheless, involuntary postponement of childbearing should be included in the explanation for understanding reproductive decision making in time of aging fertility.

Table 3.
The distribution of different fertility-intention outcomes

Fertility outcomes	Country		
	Netherlands	Switzerland	Hungary
Intentional parents	75	55	40
Postponers	15	27	42
Abandoners	11	18	18

4.2. Analysis of explaining factors: hypotheses and results

Age

Assumptions and former results:

Hypotheses could be drawn from two kinds of approaches. The so called "biological-aging" hypothesis supports the idea that with increasing age the realization of intentions will be increasingly unsuccessful, since the fecundity decreases with age. This will, perhaps, result in abandoning childbearing intentions. On the other side, if social limits of childbearing exist as

norms (Settersten and Hagestad 1996), we can assume, that people approaching these age limits, whatever their situation, will strive to realize their intentions. Both approaches state that with increasing age postponement decreases. When considering intentional parents vs. abandoners, according to the biological aging approach support, we expect a higher risk of abandonment with increasing age; conversely, the social age limit supports the higher chance of becoming intentional parents.

Heaton and his colleagues found a positive relationship between the advancement of age and the chances of switching to childlessness (abandonment). Berrington (2004), studying childless people between the ages of 30 and 39, also concluded that the advancement of age decreases the chance of successfully realizing childbearing intentions. We have no supporting research results regarding the social age limit idea.

Results:

Age is a relevant predictor of the before mentioned types of intention-behavior relationships; it yields a significant effect in 5 out of 6 relations (see Table 4, first line). Those who failed to realize their intentions within three years – regardless of the changes in their intentions – are clearly older than those who succeeded. The result dos not support fully any of the mentioned approaches. We know only, that younger people succeed to realize intentions with a higher probability, than older ones. Some of the older ones, who wanted to have a child still intend one while other abandon their intentions.

Parity

Assumptions and former results:

It is difficult to review demographic literature when it comes to formulating the possible effects of parity. One division seems to be rather clear: mechanism regarding the entry to parenthood (parity 0) versus further childbearing seem to be quite different (Hobcraft, Kiernan, 1995; Hoem, Hoem, 1989). We can expect to find the highest rate of postponement and the lowest rate of successful realization of childbearing intentions among the childless, since this group exhibits the widest array of alternative life goals competing with childbearing (Barber, 2001) Furthermore, the findings by Quesnel-Vallée and Morgan (2003) – i.e. that those intending to have two children have the best chance of realizing their intentions and that those planning to have no child or one child often end up having more, while those intending to have three or more often end up having less – seems to indicate that people with two or more children may have a lower chance of realization than those having non or only one child. At the same time, Berrington (2004) found that in a given 6-year period, those with no

child or one child had the highest likelihood of realizing their (further) childbearing intentions. According to the former research results we have contradictory assumptions: we assume that those having parity 0 will have a higher risk to be a postponer and lower risks to be an abandoner, than higher parity parents.

Results:

In most of the cases, the effect of the number of children appears to be significant and the effect mechanism seems to be as assumed. Regarding the relation between intentional parents and postponers, we see unambiguously that those of party 0 have a higher risk to be a postponer than successfully realizing their intentions. If we compare those who abandon their childbearing intentions to those who realize them, it emerges that people in Hungary and in the Netherlands with one (and more) child(ren) are significantly more likely to abandon their plans then childless people. This is in accordance with our expectations. Conversely, in Switzerland the relation is reversed: childless people a have higher risk of abandoning their intentions than people with children (Parity 1 and Parity 2+ [11]). This result called our attention to differences between fertility regimes in Europe. Not only postponement at the macro level characterizes fertility regimes, because that should involve more similarity in fertility behavior among Hungarian and Swiss people. On the contrary regarding abandonment, we found similarities between Hungary and Netherlands. Swiss behavior seems to be the outlier: the higher risk of being an abandoner among parity 0 and in relation to higher parities point to, and is indicator of, the high childlessness in Switzerland (Dorbritz, Ruckdeschel, 2005.) To sum up, we could find different country-specific behavior behind the general trend of postponement.

Partnership

Assumptions and former results:

Fertility studies usually assume that a partnership is a prerequisite to childbearing and, moreover, to the realization of childbearing intentions. It is a more intriguing question whether the form of partnership (marriage or cohabitation) has any effect on the realization of intentions. It seems that in some countries, such as France, where cohabitation is widespread, this form of partnership has only a modest effect on the chances of childbearing (Toulemon and Testa, 2005). Conversely, in the United States, cohabiting couples are less likely to realize their intentions (Heaton et al., 1999). In a more detailed analysis, we also find, that females living in cohabitation are less successful to realize their positive intentions (Spéder,

---

[11] Although in Parity2+ the odds are high, they are not significant.

Kapitány, forthcoming). We agree with the authors who pointed out that the meaning of cohabitation differs from country to country (Heuveline and Timberlake 2004), which is directly related to the prevalence of cohabitation within the countries as well. The three countries are interesting cases from this perspective, since cohabitation as a form of partnership is rather widespread in all of them. Our assumption is that those cohabiting are perhaps less committed to each other; therefore, the rate of realization of intentions is lower among them.

Results:

Partnership status exhibits a clear influence if comparing singles with married couples (and cohabitors). In all three countries, partnership is furthermore a prerequisite for the realization of fertility intentions (Schoen, 1999, Philipov and Testa 2007). (One can raise doubts whether asking people living alone to state their childbearing intentions is irrelevant, but we should also consider that many of them may be dating and/or have LAT partnerships.) Comparing cohabitation and marriage, we could not find strong and significant differences. Regarding the realization of fertility intentions we could not identify clear differences by the type of partnership.[12]

Level of education

Assumptions and former results:

Education can simultaneously act as an economic and cultural mechanism. There is a strong correlation between education and income levels, so the level of education could capture both "opportunity cost-effects "(in case of females), and "income-effects" (in case of males, and also highly educated females) (cf. Quesnel-Vallée and Morgan 2003). There is a variety of lifestyles and cultural resources that are related to education[13]. From our particular perspective, it is important to highlight, that people with a higher level of education are generally more informed and knowledgeable – by virtue of it, we can assume that intended parenthood will be the most pervasive among them.

Results:

The level of education influences the realization of positive fertility intentions in Hungary and partly in the Netherlands. In Switzerland educations seems not to have any influence. In

---

[12] Note that we find significant influences among women for Hungary and were considering also negative intentions: cohabitors had a higher chance to realize their negative fertility intentions than married people (Spéder, Kapitány, forthcoming).

[13] For instance, employment motivations differ as well: among those with a higher level of education, career perspectives dominate, while those with a lower level of education are more concerned with making a living.

Hungary, taking all other factors into account, the higher one's level of educational attainment, the higher are one's chances to realize fertility intentions. In other words, fertility plans are more likely to be postponed or abandoned by people with lower education. This relationship also holds for the Dutch case. Abandoners seem to be clearly more present among lower educated.

Economic activity: having a job

Assumptions and former results:

It is difficult to assess the role played by economic activity, i.e. having a job or not (*employed/non-employed)*, with respect to fertility intentions. This is a very crude variable, since it could cover very different mechanisms (eg. Heaton 1999, Kreyenfeld 2001). According to previous research, the effect of employment is ambivalent, especially as far as *women* are concerned (cf. Kreyenfeld, 2001). There are two simultaneous influences at work: the effect of opportunity cost and the income effect. Research findings on the realization of intentions corroborate the importance of the income effect[14]. Berrington (2004) showed that among childless women, those with a higher income are more likely to give birth and Adsera (2005) pointed out that the unemployed are prevented from realizing their childbearing intentions. As for men, research findings are less ambivalent and in most cases they reflect an income effect (Ermisch, 2002). The question is, whether the different mechanism among male and female offset each other. All together, we assume, that among men, those employed will be the most likely to realize their childbearing plans.

Results:

No significant results can be reported. In the future we should try to separate male and female respondents. We assume that the used variable is oversimplified, since it includes many different statuses, especially in case of women, namely: unemployed, people on parental leave, housewife, students, etc. It is not surprising, that we could not show clear significant effects.

Religious denomination

Assumptions and former results:

We agree with those authors who posit that beyond demographic factors and socio-economic environments, a determining and independent role is played by values and orientations (Lesthaeghe, 1995; Moors, 2002; Liefbroer 2005). However our data-sets give limited space

---

[14] Perhaps opportunity costs have a stronger effect on the formulation of intentions.

for comparing ideational factors. We could retrieve in the analysis the religious denomination. This could be in interesting issue per se. While an impressive number of demographic analyses investigated the effect of religious affiliation on fertility behavior in the United States (cf. the reviews of Lehrer 2004; McQuillan 2004), European studies on this issue are scarce. Philipov and Berghammer's (2007) comparative analyses on European countries constitutes an exception. It analyses the effect of religiosity on intentions to have a second or third child and in general concludes that religiosity is an important predictor. But the dependent variable in this analysis is different, namely focusing on intentional outcomes.

All three countries are religiously mixed, and differ in the representation of the different denominations: In Hungary the majority is Roman Catholic, there is a Protestants (Calvinists and Lutherans) minority, in Switzerland, in the country of Calvin, Protestants and Roman Catholics have about similar relevance. The Netherlands could be seen as a country of non-religiousness, although Roman Catholics and Protestants are also present.

Results:

Table 4 shows the results of different denominations relative to being a Roman Catholic. The results are selective. In Hungary and the Netherlands non religious people seems to be more likely to postpone than to realize their intentions. In the Netherlands Roman Catholics have a significantly higher chance than those of any other denomination to realize their fertility intentions. In Switzerland there are no differences between Roman Catholics, Protestants and the non-religious: only those belonging to another religion seem to postpone with a higher probability. This results hints to a further research on religiosity and religious denomination.

Table 4.
Multinomial Regression Predicting Patterns of Realization of Time-Dependent Intentions and Intention Revision

| | Postponers[a] | | | Abandoners | | |
	Hungary	Netherlands	Switzerland	Hungary	Netherlands	Switzerland
Age	1.111***	.987	1.092***	1.305***	1.297***	1.074**
Male	.890	1.556	1.059	.471***	3.616***	.822
Parity1	.663**	.349***	.138***	3.592***	1.640	.221***
Parity2+	.383***	.500	.252***	5.250***	2.958**	.521
Cohab at wave I	1.249	1.553	.620	.954	1.307	.400*
Alone at wave I	4.009***	2.311	4.234***	3.441***	2.630	5.939***
Education	.945*	.948	.999	.844***	.817***	.978
Job	1.149	.691	.811	1.109	1.479	1.661
Calvinist	1.176	3.377*	1.390	.880	.910	.829
Other religion	.848	5.602**	4.013***	.416**	.612	.774
No religion	1.433**	2.714*	1.345	.992	.942	1.756
Chi-Square:		109	103			
Df:	22	22	22			
Nagelk.R^2.	0.37	0.26	0.27			
N:	1069	458	408			

21

5. Conclusions

We analysed the realization of intentions in three European countries who were characterized by having quite different fertility regimes in the reference period. The success of realization was quite different in the three countries, which enabled considerations about individual childbearing behavior and macro level fertility postponement. Before this research, demographic analysis rarely posed the questions of individual behavior during the time of postponement: we found that the literature implicitly assumed that many people intended to give birth, whatever the reason, later in their life, and that is the basic feature of postponement at the individual level. Our results revealed a different causation: postponement of fertility is ***a result of failure in realizing one's childbearing intentions***. Therefore macro level postponement is to a large extent the result of involuntary postponement of childbearing wishes. This does not mean that postponement of fertility is not a result of the intended realization of births in later ages. Although we could not measure this process with our data, we can assume, that this mechanism is also in force. However, we argue, that non-intended or involuntary postponement is a crucial element of the *postponement transition.*

Our multivariate analyses revealed that factors determining the realization of intentions in different countries overlap. Age and parity seemed to be the clearest factors. Secondly, we found clear country-specific results, for example, signs of involuntary childlessness could be revealed in Switzerland. Thirdly, significant effects of structural and ideational factors, could be revealed. However these factors were measured in an oversimplified way. We believe that more detailed measures will lead to a better understanding of factors contributing to the realization and non-realization of fertility intentions. There are two options to follow this suggestion. On the one side more elaborated county-specific analysis could be carried out. On the other side, the at least two waves of the coming longitudinal Generations and Gender Surveys should be utilized.

Appendix

Means and standard deviations of independent variables

	Hungary		Netherlands		Switzerland	
	Means	Std. Dev.	Means	Std. Dev.	Means	Std. Dev.
Age	29,2	4,9	31,4	4,6	33,0	5,3
Sex (0-male; 1 female)	0,49	0,5	0,67	0,47	0,48	0,50
Parity1	0,30	0,46	0,41	0,49	0,37	0,48
Parity2+	0,17	0.38	0,14	0,34	0,18	0,39
Cohabiting at w1	0,19	0,40	0,31	0,46	0,19	0,39
Alone at w1	0,27	0,44	0.07	0.26	0,13	0,34
Job	0.76	0.43	0.85	0.36	0.85	0.35
Education (continuous, classes)	11,7	2,5	14,6	2,1	13,2	2,7
Calvinist	0.15	0.35	0.18	0.38	0.34	0.47
Other rel	0.11	0.31	0.06	0.23	0.08	0.27
No rel	0,21	0,40	0.57	0.50	0.13	0.34

References

Adsera, A., 2006. Marital fertility and religion in Spain, 1985 and 1999. *Population Studies*, Vol. 60, No. 2, 2006, pp. 205-221.

Ajzen, I., 1988. *Attitudes, Personality and Behavior*. Buckingham: Open University Press.

Barber, J.S., 2001. Ideational Influences on the Transition to Parenthood: Attitudes Toward Childbearing and Competing Alternatives. *Social Psychology Quarterly* 64(2): 101–127.

Berrington, A., 2004. Perpetual postponers? Women's, men's and couple's fertility intentions and subsequent fertility behaviour. *Population Trends 117*, 9-19.

Bhaumik, S.K. and J.B . Nugent, 2002. Does Economic Uncertainty Have an Impact on Decisions to Bear Children? Evidence from Eastern Germany (July 2002). William Davidson Institute Working Paper No. 491. (http://ssrn.com/abstract=323592 or DOI: 10.2139/ssrn.323592)

Billari, F.C., Liefbroer, A. C., Philipov, D., 2006: The Postponement of Childbearing in Europe: Driving Forces and Implications. *Vienna Yearbook of Population Research* pp.1-17.

Bongaarts, J., Feeney, G. 1998. On the quantum and tempo of fertility. *Population and Development Review* vol. 24(2), pages 707-726

Dorbritz, J., Ruckdeschel, K. 2005. Kinderlosigkeit in Deutschland – Ein europäischer
Sonderweg? Daten, Trends und Gründe. In. Konietzka, D. Kreyenfeld, M. Ed. Ein Leben ohne Kinder. Kinderlosigkeit in Deutschland. P.45-81.

Eckhard, J. and Klein, T., 2006. *Männer, Kinderwunsch und generatives Verhalten: Eine Auswertung des Familiensurvey zu Geschlechterunterschieden in der Motivation zur Elternschaft* VS Verlag.

Ermisch, J.F., 2002. Economic models of women's employment and fertility, in: Siegers, J.J. de Jong-Gierveld, J. and van Imhoff, E. (eds.), *Female Labour Market Behaviour and Fertility. A Rational Choice Approach*. Berlin: Springer, 179–190.

Fokema, T. , de Valk, H., de Beer J., van Duin, c., 2008. The Netherlands: Childbearing within the
context of a "Poldermodel" society. *Demographic Research,* vol. 19, art. 21, pp. 743-794.
http://www.demographic-research.org/Volumes/Vol19/21/

Goldstein, J., Lutz, W. and Testa, M. R., 2003. The emergence of sub-replacement family size ideals in Europe. *Population Research and Policy Review* 22: 479–496.

Heaton, T.B., Jacobson, C.K. and Holland, K., 1999. Persistence and Change in Decisions to Remain Childless. *Journal of Marriage and Family* 61(2): 531–539.

Heuveline, P. and J.M. Timberlake, 2004: „Cohabitation and family formation across western nations", Paper presented at the Annual Meeting of the Population Association of America, Minneapolis, Minnesota, May 1-3, 2003.

Hobcraft, J. – K. Kiernan (1995): Becoming a parent in Europe. In: EAPS-IUSSP: *Evolution or revolution in European Population*. 27–64.

Hoem, B. and Hoem, J.M., 1989. The impact of Women's employment on second and third births in modern Sweden. *Population Studies* 43(1): 47–67.

Jones, E. F., 1981. The impact of women's employment on marital fertility in the US 1970–75. *Population Studies* 35(2): 161–173.

Kamarás, F. and K. Szukics Serfőző, 2003: *Ten years after the wedding: a longitudinal survey of marriages contracted in 1990 and 1991*. Budapest: Central Statistical Office pp. 84.

Kreyenfeld, M., 2001. Employment and Fertility – East Germany in the 1990s. PhD Dissertation, Rostock: MPDIR, pp. 259

Kreyenfeld, M., 2005. Economic uncertainty and fertility postponement Evidence from German panel data. MPIDR. Working Paper, 2005/034.

Lehrer 2004; Religion as a Determinant of Economic and Demographic Behavior in the United States *Population and Development Review* vol. 30(4), pages 707-726

Lesthaeghe, R., 1995: The Second Demographic Transition – An interpretation. Mason K.O. and A.-M. Jensen (eds.): *Gender and Family. Change in industrialised countries*. Oxford, Clarendon Press, pp. 17–62.

Lesthaeghe, R. 2001: Postponement and recupeartion. Recnet fertility trends and forcasts in six Western European countries. Working Paper IPD-WP-2001-1.

Liefbroer, A.C., 2005. The Impact of Perceived Costs and Rewards of Childbearing on Entry into Parenthood: Evidence from a Panel study. *European Journal of Population*, vol. 21. 367-391.

Liefbroer, A.C., 2008: Changes in Family Size Intentions Across Young Adulthood: A Life-Course Perspective. *European Journal of Population*. (open access: DOI 10.1007/s10680-008-9173-7)

McQuillan, K. 2004. When Does Religion Influence Fertility? *Population and Development Review* Vol. 30: 25-56

Moors, G., 2002. Reciprocal relations between gender role values and family formations. In. Lestaheghe, R. (ed.) *Meaning and choice: value orientations and life course decisions*. Den Haag/Brussel: NIDI/CBGS. (NIDI CBGS publ., 37) 217-250.

Monier, 1989: Fertility Intentions and Actual Behavior. A longitudinal Study: 1974, 1976, 1979. *Population: An English Selection*, Vol. 44. No. 1. (Sep.) 237–259.

Müller, R., 2000. Single, nicht-eheliche Lebensgemeinschaft oder Ehe? In: Walter R. Heinz (Hrsg.): Übergänge. Individualisierung, Flexibilisierung und Institutionalisierung des Lebensverlaufs. Juventa, 188–204.

Mynarska, M.A., 2007. Fertility postponement and age norms in Poland: is there a deadline for parenthood? MPIDR Working Paper. WP-2007-029, pp.36.

Perelli-Harris, B., 2006. The influence of Informal Work and Subjective Well-Being on Childbearing in Post-Soviet Russia. *Population and Development Review* 32(4): 729–753.

Philipov, D., Spéder, Zs. and Billari, F.C., 2006. Soon, later or ever: The impact of anomie and social capital on fertility intentions in Bulgaria (2002) and Hungary (2001). *Population Studies* 60(3): 289–308.

Philipov, D. and M.R. Testa, 2007. Why fertility timing intentions remain unrealised? The role of competing intentions. (Unpublished manuscript, prepared within the project 'Fertility Intentions and Outcomes: The Role of Policies to Close the Gap', funded by the European Commission, DG Employment, Social Affairs and Equal Opportunities (contract no. VS/2006/0685).

Philipov, D. and C. Berghammer, 2007. Religion and fertility ideals, intentions and behaviour: a comparative study of European countries. *Vienna Yearbook of Population Research* 271-305.

Rindfuss, R.R., Morgan, S.P. and Swicegood, G., 1988: *First births in America: Changes in the timing of parenthood.* Berkeley: University of California Press

Quesnel-Vallée, A. and Morgan, S.P., 2003. Missing the Target? Correspondence of Fertility Intentions and Behavior in the U.S., *Population Research and Policy Review* 22(5–6): 497–525.

Schoen, R., Astone, N.M., Kim, Y.J., Nathanson, C.A. and Fields, J.M., 1999. Do Fertility Intentions Affect Fertility Behavior? *Journal of Marriage and the Family* 61(3): 790–799.

Settersten, R.A. and Hagestad, G.O., 1996. What's the latest? Cultural age deadlines for educational and work transition. *The Gerontologist* 36(5): 602–613.

Sobotka, T. 2004. *Postponement of Childbearing and Low Fertility in Euroep.* Population Studies. Amsterdam: dup

Sobotka, T., 2008. Overview Chapter 6: The diverse faces of the Second Demographic Transition in Europe. *Demographic Research* Vol. 19. Art. 7. 171–224.

Spéder, Zs., 2001. Turning points of the life-course. Concept and design of the Hungarian social and demographic panel survey. www.dpa.demografia.hu. (In Hungarian: *Demográfia* XLIV(2–3): 305–320.

Spéder, Zs., 2006. Childbearing Behavior in the New EU Member States: Basic Trends and Selected Attitudes, in: Lutz, W., Richer, R. and Wislon, C. (eds.), *The New Generations of Europeans. Demography and Families in the Enlarged European Union*. London: Earthscan, 59–82.

Spéder, Zs. and B. Kapitány, 2007. *Gyermekek: vágyak és tények.[Children: desires and facts*] KSH-NKI Műhelytanulmányok No. 6. pp. 209.

Spéder, Zs. and F. Kamarás, 2008. Hungary: Secular fertility decline with distinct period fluctuations. *Demographic Research,* Volume 19, Article 18, Pages 599-664.

Spéder, Zs. and B. Kapitány, 2009. How are Time-Dependent Childbearing Intentions

Realized? Realization, Postponement, Abandonment, Bringing Forward. European Journal of

Population. DOI 10.1007/s10680-009-9189-7

Thomson, E., 1997. Couple childbearing desires, intentions, and births. *Demography*, 34. 343-354.

Toulemon, L. and R.M. Testa, M.R., 2005. Fertility intentions and actual fertility: A complex relationship. *Population & Societies* No. 415. September, pp. 4.

Vikat, A., Spéder, Zs., Beets, G., Billari, F.C., Bühler, C, Désesquelles, A., Fokkema, T., Hoem, J.M., MacDonald, A., Neyer, G., Pailhé, A. Pinnelli, A. and Solaz, A., 2007. Generations and Gender Survey (GGS): Towards a Better Understanding of Relationships and Processes in the Life Course. *Demographic Research on-line* Journal Volume 17, Article 14. 389–440. www.demographic-research.org

Waite L. J. and M. Galagher, 2000. *Case for Marriage. Why married people are happier, healthier, and better off financially.* New York: Broadway books

Westoff, Ch. and N. Ryder, 1977. The Predictive Validity of Reproductive Intentions. *Demography* (4): 431–453.

III. Downwards and upwards changes in expected family size. Understanding the changes using long run panel surveys

By Maria Iacovou, Lara Tavares (Isitute for Social and Economic Reserach at the University of Essex, Colchester)
(Extended abstract)

1. Background

This paper examines the determinants of individuals' fertility expectations: specifically, the determinants of changes in these expectations over the life course.

In recent years, birth rates have been falling across the developed world, to levels well below replacement in many countries (Kohler et al. 2002). This has led to a renewed interest in fertility intentions as one determinant of achieved fertility. There is already a well-developed literature on how fertility intentions are formed as well as on the relationship between intended and realised fertility.

Fertility intentions were introduced in the American fertility survey with the purpose of helping to improve fertility forecasts as far back as the mid 1950s (Westoff and Ryder, 1977). Since then a rich literature has developed in order to assess the validity of fertility intentions as predictors of fertility behaviour. Despite the general consensus that there is a strong link between intended and achieved fertility, it is also recognized that there is substantial discrepancy between the two measures: fertility intentions are far from being a perfect predictor for achieved fertility, which generally falls short of reported expectations (Morgan 2001; Smallwood and Jefferies 2003).

The gap between average intended and achieved fertility has grown larger over recent decades as the fall of fertility to below-replacement levels in many developed countries has not been accompanied by an equal fall in fertility intentions (Bongaarts 2001). The fertility gap has often been seen as reflecting an "unmet need for children" arising from constraints – biological, economic, social – in people's lives (Goldstein et al. 2003).

The purpose of this paper is to investigate this "fertility gap" at the individual level, and to assess the extent to which it should be interpreted as an unmet need for children arising from constraints over individuals' lives, as opposed to reflecting shifts in desired fertility over the life course which arise for other reasons.

This point has been made by a number of authors: Smallwood and Jefferies (2003) point out that differences between women's reported intentions and eventual fertility should not necessarily be interpreted as an unmet need, while Lee (1980) and Miller and Pasta (1995) point out that there is no reason to believe that individuals' fertility intentions should be static over their lifetimes, and a number of reasons to believe that they may change – and that this might help explain the mismatch between intended and observed fertility.

A number of studies have found evidence that individuals change their reproductive intentions over their lives: Van Peer (2002), Smallwood and Jefferies (2003), Goldstein et al. (2003), Berrington 2004; Heiland et al. 2008; Liefbroer 2008). Several of these find that while, on average, respondents revise their intentions downwards over the course of their lives, some respondents adjust them upwards, which challenges the idea that there is a *generalized* unmet need for children. Knowing what leads these individuals to increase the number of intended children is potentially as informative as knowing why many people revise their expectations downwards.

This paper builds on existing findings in a number of innovative ways. First, we use a multivariate framework which allows us to analyse separately the determinants of upward and downward revisions in fertility intentions; we show clearly that these are not "equal and opposite" concepts, but that very different factors are at play in the two scenarios. Second, we analyse separately the influences on men's and women's fertility intentions. And third, we exploit the fact that the BHPS is a household survey, which contains data on respondents' partners, to analyse the effects not only of individuals' characteristics, but also of their partners' characteristics, showing that there are substantial asymmetries between men and women in terms of the way they adjust their intentions in accordance with their partners' intentions.

2. Data

The data used in this analysis come from the British Household Panel Survey (BHPS). The BHPS has been conducted each year since 1991 on a nationally representative sample of about 10,000 individuals in 5500 households. Given that BHPS is household-based, each year every adult (16 years old or more) within the household is interviewed. The last available wave is wave 17 in 2007.

Information about respondents' fertility history was collected in wave 2. For each future year of the survey, we updated this figure, adding in children born to respondents – this creates a measure of actual, or achieved, fertility.

A measure of expected fertility comes is constructed from the answers to two questions: "Do you think you will have any (more) children?" and [if the answer to the first question is positive] "How many (more) children do you think you will have?" These questions are asked in wave 2, and repeated in waves 8, 12, 13 and 17. These repeated observations allow us to look at changes in fertility intentions over different time intervals: short-term (from wave 12 to 13), medium-term i.e 5- or 6 years interval (from wave 2 to 8; from wave 8 to 13; from wave 12 to 17) and long-term (from wave 2 to 17).

We note that these questions provide us with a measure of *expected* fertility, rather than *desired* or *intended* fertility; Miller (1992) and others have noted that there are differences between the different types of measures .

3. Findings

Figure 1 motivates the later analysis by demonstrating that for a sizeable proportion of women, the number of children they have had by the end of their reproductive lives does not match the number they expected to have earlier in their reproductive careers. This figure relates to women aged 25-35 when first observed in 1992, and aged 40-45 when interviewed fifteen years later (in the paper this is replicated for subgroups of women, and for men).

Of women who did not expect to have children when first interviewed, 88% of them had not gone on to have children; the other 12% had had one or more children. Of women who expected to have one child, only 62% actually had one child fifteen years later: around 10% had had no children, while almost 30% had had more than one child. For expected parities greater than two, the story is similar, with a large proportion of women achieving more or less than their expected parity; the greater the expected parity, the higher the proportion falling short of their expectations at the end of their reproductive years.

Figure 1

Intentions and realisations - women aged 25-35 in 1992. including those who had already reached their desired number of children.
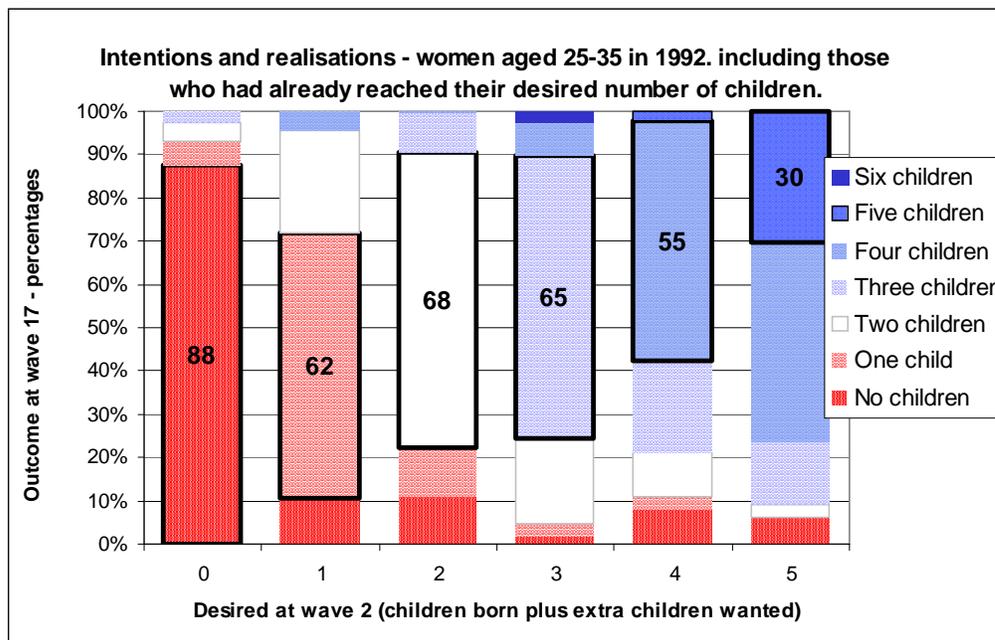
Table 1 shows the changes in fertility intentions in the medium-term i.e 5- or 6 years interval by age groups (18-24, 25-30, 31-36). Even though the percentage of women revising their intentions downwards is higher than the percentage of those revising upwards, for all age groups, the later is, by no means, negligible. In fact, almost one in five of the youngest women revise their intentions upwards over a five-year period. This group is also more volatile in terms of the magnitude of the change in intentions: at the end of the 5- or 6 years interval 3.6% state they want at least more two children than they wanted in beginning of that period, and 9% revised downwards in at least two children.

Table 1
cell percentages - women aged 18-24

	0	1	2	3	4+
0	3.7	2.1	1.2	0.0	0.0
1	0.4	2.6	3.9	1.5	0.3
2	3.0	5.9	38.8	9.2	0.6
3	0.0	2.7	9.1	6.0	0.6
4+	0.1	0.2	3.0	2.9	2.1

cell percentages - women aged 25-30

	0	1	2	3	4+
0	6.4	0.7	0.5	0.0	0.0
1	1.4	7.6	3.3	0.3	0.0
2	2.4	5.8	37.8	5.9	0.1
3	0.2	0.2	5.9	13.0	1.6
4+	0.0	0.0	1.5	1.9	3.4

cell percentages - women aged 31-36

	0	1	2	3	4+
0	9.8	0.3	0.2	0.1	0.0
1	1.0	10.0	1.2	0.2	0.0
2	1.2	2.3	39.4	3.1	0.0
3	0.0	0.0	2.6	20.0	0.9
4+	0.0	0.1	0.1	0.5	7.1

Our multivariate analysis is based on multinomial logit regressions, with changes in fertility expectations over a six-year period being the dependent variable. Three outcomes are specified separately: the reference group is individuals whose expectations do not change over the period; the other two groups are individuals whose expectations increase and decrease over the same period. All regressions are estimated for women and men separately. Several specifications have been estimated: Table X presents the results from one such (relatively parsimonious) specification.

The descriptive analysis demonstrated that men and women revise their fertility expectations both upwards and downwards. One innovative feature of our multivariate analysis is that we analyse these upward and downward revisions separately, rather than assuming that they are equal and opposite phenomena. We find good evidence that upward and downward revisions are *not* equal and opposite phenomena, but that they have rather different determinants.

Both upward and downward revisions are made in response to the expectations of a partner: both men and women revise their expectations upwards if their partner expects to have more children than they do; and both men and women revise their expectations downwards if their partner wants fewer children than they do. Income is also a factor in both directions, but the effect varies interestingly by gender. Women whose own incomes are higher are more likely than other women to decrease, and less likely to increase, their fertility expectations over the six-year period. However, the effect for men relates not to their own income but to their female partner's income: men with higher-earning partners are more likely to decrease, and less likely to increase, their expectations.

Table 2

Decrease	Women	Men	Increase	Women	Men
Age	**0.356**	**0.477**	Age	0.023	0.142
Age squared	**-0.009**	**-0.010**	Age squared	-0.002	**-0.004**
No. kids wanted	**0.846**	**0.632**	No. kids wanted	**-1.023**	**-1.129**
Get a partner	0.195	-0.250	Get a partner	**0.837**	0.467
Lose a partner	-0.044	**0.621**	Lose a partner	0.393	0.119
No partner	0.410	-0.516	No partner	0.629	0.581
Married	-0.123	**-0.752**	Married	-0.175	0.172
Get married	0.018	-0.340	Get married	**0.434**	0.134
Partner wants more	0.502	0.130	Partner wants more	**0.617**	**0.731**
Partner wants fewer	**0.937**	**0.743**	Partner wants fewer	0.472	0.664
Have a baby	-0.186	-0.073	Have a baby	**1.824**	**1.682**
Own income	**0.071**	-0.001	Own income	**-0.061**	0.006
Partner's income	0.012	**0.051**	Partner's income	-0.008	**-0.038**
Constant	**-6.797**	**-8.340**	Constant	0.034	-1.560
N	2915	2787			
Pseudo R-squared	0.271	0.256			

Another factor, associated with upward but not downward revisions in expectations, is the birth of a child. Part of the increase in expectations associated with the birth of a child is associated (by definition) with the birth of children to individuals who previously thought they would have no further children have a child – by definition, the expected number of children increases in these cases. But some upward revisions also occur when an individual expecting to have another child fulfils that expectation – and then decides that he or she would like to have one or more additional children over and above that number.

Existing research in this area focuses heavily on fertility expectations reducing with age, particularly for women approaching the limits of their biological ability to have children. Here, in the "decreasing" regressions, the coefficient on age is positive for both men and women – but the coefficient on age squared is negative, with a turning point occurring around age 20-25. Thus, these results appear to suggest that after this age, men and women are *less* likely to revise their childbearing expectations downwards as they get older. This at first appears counter-intuitive. However, this finding is not incompatible with our earlier finding (and an intuitive prediction) that fertility expectations decrease over the fertile years. Rather, it indicates that expectations are much more volatile, in both directions, earlier in life than they are later in life. Thus, the trend in expectations over the fertile years *is* downwards, but because of greater volatility in early life, younger people are more likely than older people to revise their expectations downwards.

4. Conclusions

Our conclusions are as follows. One of the questions which motivated this research relates to the fact that individuals' reported fertility expectations early in life are on average higher than their realised fertility at the end of their reproductive years. It asks whether this difference should be interpreted as an unmet need for children (ie, whether people continue to *want* the number of children they wanted earlier in life, but they revise their expectations downwards as they come to realise that they will be constrained, biologically, economically, or for some other reason, to have fewer children than they want). Alternatively, does it simply reflect a process of individuals changing their minds over their lives about the number of children they want, for reasons unrelated to constraints. This research shows that it is *not* correct to think solely in terms of an unmet need. We have identified at least one reason why people adjust their fertility which arguably has little to do with constraints: both men and women adjust their expected fertility, upwards, as well as downwards, to fit in with their partners' expectations. In fact, the finding that revisions occur in both upward and downward directions is important in itself – our research shows (a) that both types of revisions occur, and (b) that they are not equal and opposite. There is a clear benefit in separating out the two types of revisions for analytical purposes; and the fact that upward revisions occur, and account for around one third of all revisions, adds weight to the argument that individuals revise their fertility expectations for a range of rich and complex reasons, not all of which are related to constraints on their lives.

IV. Transition to second birth in Bulgaria

By Elitsa Dimitrova (Co-ordination Research Centre for Social Research at the BAS)

(Extended abstract)

The study focuses on the influence of some important social characteristics such as woman's and partner's educational level on the changing second birth risk in Bulgaria. For the analysis we apply event history modeling technique and utilize the data set from the first wave of the Gender and Generation Survey survey, conducted in 2004. The influence of chosen covariates on the process under study is modeled by the means of multiplicative intensity regression. The underlying assumption for the shape of the baseline hazard defined by the time measured in months since first birth until second conception or censoring, is that it is a piecewise constant function.

As time-varying covariates we use the period, the woman's education and the partnership status. The fixed time covariates in the model are: the mother's age at first birth, sex of the first child, women's ethnicity, partner's education constructed on the basis of the changes in the woman's partnerships status at the time since firth birth, ethnicity of the woman and social background characteristics (number of siblings and the type of the residential place the women lived in before age 15).

In order to study the effect of woman and partner's education on the risk of second birth in Bulgaria, we estimating three models:
1) Model 1 estimates the main effect of the woman's educational enrollment and attainment on the second birth risk without controlling for the influence of the partner's educational characteristics.
2) Model 2 estimate the impact of the men's educational level on the second birth risk without controlling for the female educational activity and status.
3) Model 3 includes controls for both female's and partner's educational characteristics.

Table 1: Effects of woman and partner's education on the second birth risk.

Woman	A: Woman's education only	B: Woman's education (partner's education included)
In education	0.76 ***	0.75 ***
Less than sec	1.25 ***	1.23 ***
Secondary	1	1
Tertiary	0.98	0.97
Partner	C: Partner's education only	D: Partner's education (woman's education included)
Less than sec	1.16 ***	1.05
Secondary	1	1
Tertiary	1.00	1.05

Source: author's estimations based on the Bulgarian GGS, wave 1.

Note:

(1) Panel A: Controlled for period, mother's age at first birth, sex of the first child, woman's ethnicity, partnership status, social and family background (type of residential place the woman lived before age of 15 and number of siblings).

(2) Panel B: Controlled for mother's age at first birth, sex of the first child, woman's ethnicity, partnership status, social and family background (type of residential place the woman lived before age of 15 and number of siblings) and partner's education.

(3) Panel C: Controlled for period, mother's age at birth of first birth and sex of sex of the first child, woman's ethnicity, partnership status and social background (type of residential place the woman lived before age of 15 and number of siblings).

(4) Panel D: Controlled for mother's age at first birth, sex of the first child, woman's ethnicity and education, partnership status, social and family background (type of residential place the woman lived before age of 15 and number of siblings).

(5) *** $p \leq 0.01$; ** $0.01 < p \leq 0.05$; * $0.05 < p \leq 0.10$

The results from the first model (panel A in table 1) show that in comparison to the risk of the women with completed secondary degree (reference category), those who are still in education have a 24% lower risk of having another child. This finding confirms that in Bulgaria the educational enrollment and fertility are negatively correlated as is the case in other European countries. There is no significant difference in the second birth risk of the women with university diploma and those who have a completed secondary degree (ref).

In the case when the woman is lowly educated, the risk is increased by 25% compared to the level of the reference category. Hence, in contracts to the Scandinavian countries, Western Germany, Austria and France for example, where the highly educated women have a higher propensity to have a second and even third birth, in Bulgaria the accumulation of human capital of women and second birth risk are not positively correlated (Hoem, Prskawetz and Neyer 2001; Kreyenfeld 2002; Prskawetz and Zagaglia 2005; Köppen 2006; Gerster et al.

2007) The explanation of this result may be sought in the higher direct and opportunity costs that parenthood brings to the highly educated women.

The second model (panel C in table 1) estimates the effect of the educational characteristics of the partner the woman lived with in a union (marriage or cohabitation). The results reveal that females who live with low educated partners have 16% higher risk for having another child in comparison to the women whose partners have completed secondary degree (reference category). Interestingly, the higher education of the partner does not have a positive effect on the risk of second birth.

In the third model both the woman and partner's educational characteristics are included (panels B and D in table 1). It reveals that the effect of the female education slightly diminishes but remains strongly significant, whereas the effect of the partner's educational vanishes. This result shows that the women's educational enrolment and attainment have stronger influence on the second birth risks in Bulgaria than the partner's educational characteristics.

In order to extend further the analysis we run an interaction between women's and partner's education. In the interpretation of the findings we consider the educational homogamy (Kreyenfeld, 2002) existing in the Bulgarian society and comment only on the most plausible combinations between the partners with different educational characteristics.

Table 2: Relative risk of second birth by women and partner's education

Woman's education	Partner's education			
	Tertiary	Secondary	Less than sec	No partner
In education	**0.69****	**0.79****	0.87	0.65
Out & less than sec	1.95*	**1.21****	**1.29*****	1.40
Out & sec compl	1.07	1	1.07	0.70
Out & teriary	**1.02**	**1.00**	0.53	0.46**

Source: author's estimations based on the Bulgarian GGS, wave 1.

Note:

(1) Controlled for period, mother's age at birth of first birth, sex of the first child, women's ethnicity, partnership status, social and family background (place of residence the woman lived before age of 15 and number of siblings).

(2) *** p≤0.01; ** 0.01<p≤0.05; * 0.05<p≤0.10

In the case when the woman is low educated the hazard of second birth significantly increases compared to the reference category (both partners having completed secondary degree) regardless of the educational level of the partner.

In the case when the woman has a university degree the relative risks remains similar to that of the reference group regardless of the educational degree of the partner (tertiary or secondary).

Having a partner with university degree has a positive effect on the risk of second birth of the women with completed secondary or tertiary degree but the increase is not statistically significant.

**

The main conclusion from the analysis is that in contrast to some western European countries like Austria, Western Germany and France in which a strong positive effect of partner's education on the second birth risks is observed, in Bulgaria the partner's educational level does not substantially reduce the effect of the women's education which remains strong and significant.

Another finding reveals the absence of real reproductive time squeeze experienced by the highly educated women in Bulgaria (results not present above). This is another aspect of divergence between the Bulgarian case and some countries in Europe in which the prolonged stay in education increases the women's progression rates to second birth in the first years since entry into motherhood. The absence of time pressure in Bulgaria is explained in the paper with the early exit from educational sphere that gives more time of the university educated females to realize their reproductive plans.

V. Does economic uncertainty affect plans, timing or level of fertility? Evidence from France

By Ariane Pailhé, Anne Solaz (Institut national d'étutedes Démographicues, INED, Paris)
(Draft version – please do not cite)[15]

Summary

Economic uncertainty has been recognised as one of the determinants of fertility. In France, fertility rates stand at a high level in spite of high youth job uncertainty, which is puzzling. This article examines the impact of work uncertainty on fertility in France. It investigates whether temporary jobs and unemployment merely delay fertility or also bear an impact on completed fertility.

Different dimensions of fertility are studied for men and women respectively, i.e. intentions, timing and completed fertility by using logistic regression, event history analysis and linear regression. The data used come from the French "Families and Employers" survey (Ined, 2005).

The results show that male and female childbearing desires do not have the same determinants: men' plans depend on employment uncertainty to a larger extent than women's ones. Moreover, male timing depends negatively on unemployment while insecure job periods delay female fertility. Finally, completed fertility is influenced by unemployment spells but not by insecure job periods, for both men and women. The impact is larger for men since they are expected to be the main breadwinner.

1. Introduction

Since the eighties, there has been a rise in uncertainty on the labour market in most European countries. Unemployment and job instability have sharply increased. Entering the labour market is particularly difficult for young people, especially in France: The unemployment rate of people under 25 is about 20% in 2007, which is four points higher than the EU-25 average (Eurostat, 2007). In addition to unemployment, young people face increasing employment flexibility. Term-limited working contracts and marginal employment have become a common experience during the early life course. For instance, about one third of working people under 30 hold a fixed term contract (INSEE, 2006).

---

[15] Non-edited version.

Economic uncertainty has been identified as one of the main explanations for postponement of fertility in Europe (Blossfeld et al., 2005), and the increase in the age of parenthood is considered as one of the main explanations for the decrease in fertility (Koehler et al., 2002; Sobotka, 2004). But there is an alternative explanation regarding the link between job uncertainty and fertility. In a context of economic uncertainty, people (mainly women) may prefer to invest in maternity, since the private sphere is less uncertain than the public one. This explanation may be particularly strong in a context where fertility is highly valued.

As elsewhere on the continent, French young men and women have increased their investment in education and delayed their entry into the labour market. Entry into parenthood has also been delayed. However, France has maintained a relatively high level of fertility. In 2006, the total fertility rate (TFR) was two children per woman: it is very close to the "replacement level" and among the highest in the European Union. This high level of period fertility despite a high rate of youth unemployment is somewhat puzzling. Does economic uncertainty have really no effect on fertility in France?

Another specificity of France is the large range of social support from the state. For instance, 51% of people aged 18 to 29 receive some form of social support (housing allowances, student grants, family benefits, etc.). But unemployment benefit is available from 4 months of work and social assistance is available only from 25.

This article examines the impact of work uncertainty on fertility in France. It investigates whether temporary jobs and unemployment merely delay fertility or also bear an impact on completed fertility. The originality of the paper lies on the variety of indicators of fertility used. Indeed, we proceed in three steps, using three different indicators. First, we analyze fertility plans according to the current employment situation of both partners. Second, we study the timing of childbearing according to the job security path. Lastly, completed fertility of women and men is investigated.

## 2. Young people in France

2.1. Longer study durations

As in other European countries, French young men and women have increased their investment in education. From 1985 to 1995, young people have studied two years more: The average age at the end of schooling has increased from 19.9 years to 21.7 years. Since 1995 it has stabilized around 21.5 years (Durier and Poulet-Coulibando, 2004). For generations born after 1970, more than 50% of young people are still in education.

2.2. High rate of youth unemployment

In France the unemployment rate stands at a higher level than the EU-25 average: in 2007, it was 8.3% (7.8% for men, 8.9% for women), while the EU-25 average was 7.2% (respectively 6.5% and 7.9%). The gap in much higher for youth unemployment: In 2007, the unemployment rate of people less than 25 years old was 19.4%, compared with an average of 15.2% in the EU-25 zone (Eurostat, 2007). This high level of youth unemployment is also reached in Southern European countries and some Central European countries (figure 1).
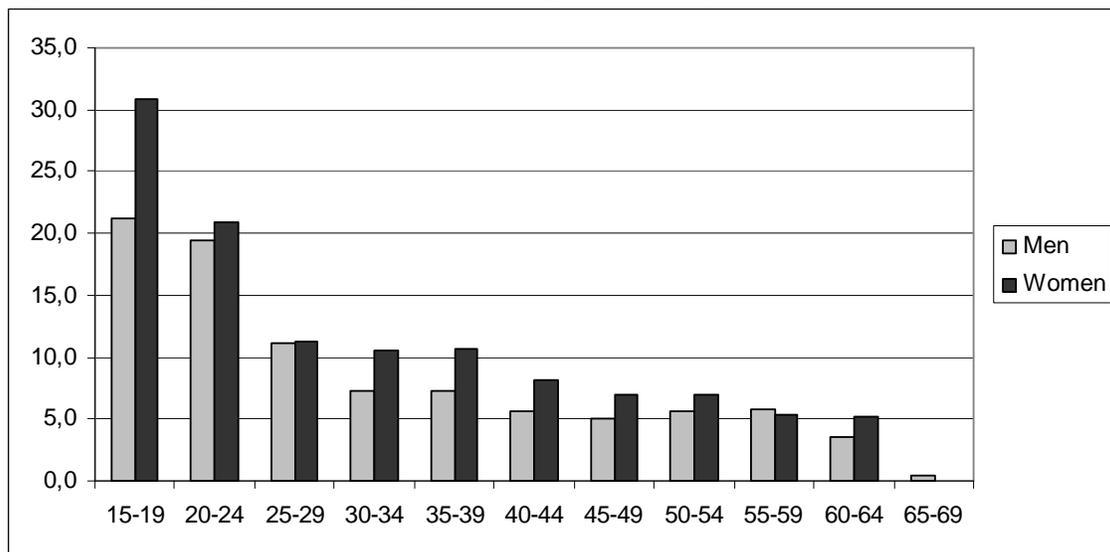
The unemployment rate decreases from age 25, but it is still high among people aged 25-29 (11.1% for men, 11.3% for women). It decreases to below 10% after age 29 for men while it is still over 10% for women aged 30-39 (figure 2).

Figure 1: Unemployment rate of people aged 15-24 in Europe, 2007
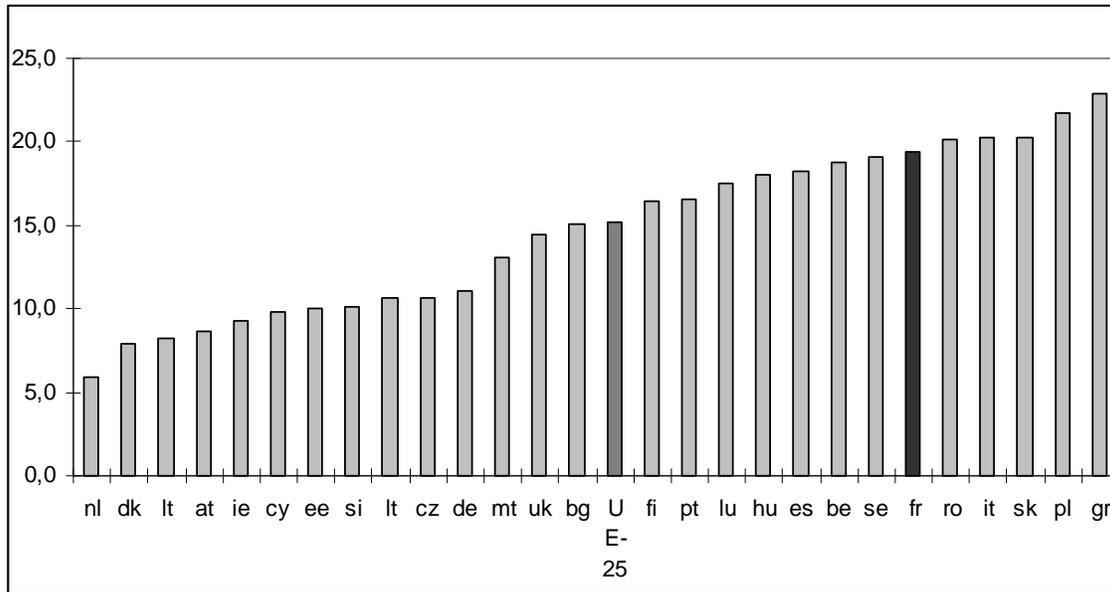
Source: Eurostat, 2007

Figure 2: Unemployment rate by sex and age in France, 2005

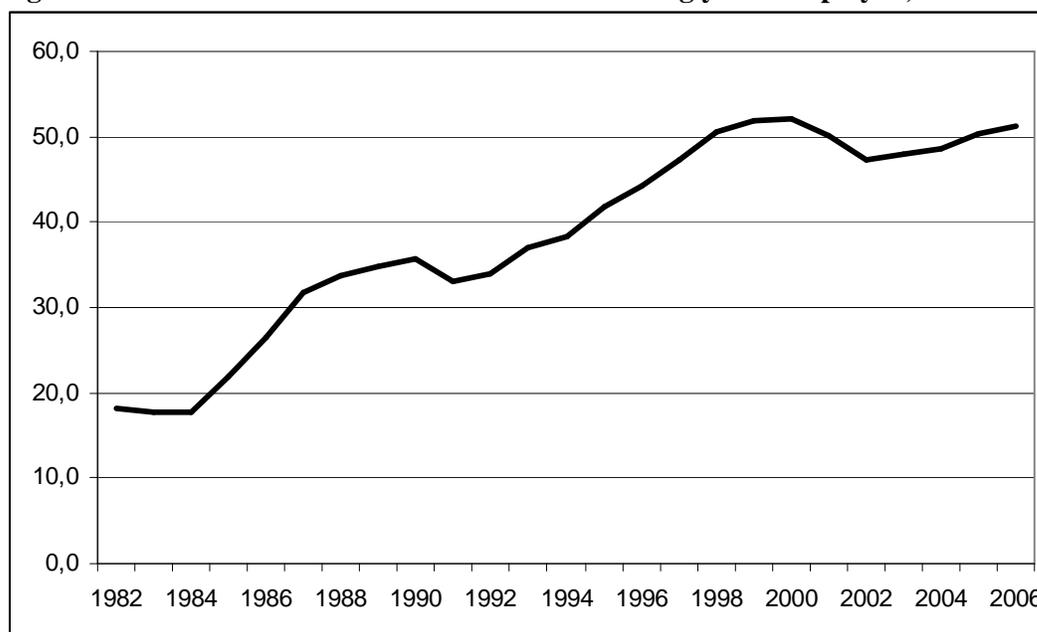Source: Insee, Labour force survey, 2005

2.3. Job instability

Since the mid-1980s, increasing economic instability has caused a rise in labour flexibility, diversified working hours and the development of atypical types of employment (Bué et al., 1999). This increase of atypical forms of employment concerns more and more young people (figure 3). In 2006, more than half of employed people aged 15-24 had a non-standard work

contract (table 1). Women are more prone to hold such a type of contract than men. Non-standard work contracts are now a common way to enter the labour market.

There are different types of non-standard work contracts: 29% of young wage earners had a fixed term contract in 2006. Those contracts have a fixed duration from 3 to 18 months which can be renewed no more than twice. Thus, people may hold those contracts for a long time. The transition rate between two years from short term to long term contract is 32% in the public sector and 38% in the private sector. This transition rate increases to respectively 44% and 48% between three years (Bunel, 2006). More than 50% of companies use those contracts, for several reasons: to face uncertainty and seasonal variation in demand or to test the efficiency of applicants, as a probation period.

In 2006, 7% of young wage earners are hired by a temporary agency to work in another place and 7% are trainees or have a government-sponsored work[16]. 15% are in apprenticeship: they work while they study. Over 30, people are more likely to benefit from long-term contracts.

Figure 3: Share of non-standard work contract among youth employed, %

Source: Insee, Labour force surveys, 1982-2006

---

[16] Trainees are not paid or low paid for a 3 or 6 months period. They concern mainly students finishing their university course. Government-sponsored work contracts are targeted at long term unemployed to help them to come back to the labour market. Jobs are mainly part-time and include professional training.

Table 1: Non standard work contracts by age, 2006

	Fixed-term contract	Temporary worker	Trainee and government-sponsored work	Apprentice	Total
15-24	21,9	6,8	7,1	15,5	51.3
25-49	6,7	2,1	1,2	0,1	10.1
15-29	*14.3*	*5.0*	*4.1*	*6.6*	*30.0*
30-49	*4.3*	*1.8*	*0.8*	*0.0*	*6.9*
50+	3,2	0,8	0,8	-	4.8

Source: Insee, labour force survey, 2006

2.4. Postponement of the entry in adulthood

The prolonged education and the later entry into working life are linked with a postponement of the entry into adulthood. Age at departure from the parental home in France is close to the European average: Women born in 1968 left the parental home at a median age of 22.6 and men did so at a median age of 24.5 (Villeneuve-Gokalp, 2005). Altogether, 52% of people aged 18 to 29 lived with their parents in 1996 (Chambaz, 2001).

The formation of the first stable union is considered to be the key event of entry into adulthood (Galland, 2000). As other demographic events, there has been a postponement of couple formation over generations: the median age at first partnership had a 2-years increase between generations 1955 and 1971. It reaches 26 years old for generation 1971 for men; it is 3 years earlier for women (Prioux, 2005).

As elsewhere in Europe, entry into parenthood has been delayed in France and the timing of fertility is changing rapidly. The fertility schedule is moving continuously to higher ages and the mean age at childbirth is continuing to rise (table 2). The mean age at first childbirth has increased since the mid-1970s; it was 23.9 in 1975 and reached 27.8 years in 2006. This rise results both from a decrease in fertility at young ages (before 25) and an increase at ages 28 and over. As the age gap between births is stable[17], this postponement of first childbirth affects the average age at birth of all parities. In 2006, in metropolitan France, 52.8% of newborn children had a mother who is at least thirty years old. They were only 45.8% in 1996.

---

[17] About 2 years and a half between the first and the second child, about 2 years between the second one and the third, 1.5 year between the third and the fourth and 1 year between the fourth and the fifth.

Table 2: Changes in mean age at maternity

Year	Mean age at maternity (total)	Mean age at maternity (first birth)
1970	27,2	23,9
1980	26,8	24,5
1990	28,3	26,0
2000	29,4	27,4
2003	29,5	27,6
2006	29,8	27,8

Source: Recent demographic developments in France. Population, 3, 2008 and Bilan démographique, Insee.

2.5. Social benefits

Social benefits received by the young are close to the European average: 51% of people aged 18 to 29 receive some form of social support from the state (Chambaz, 2001). However, Combining job incomes, state support, and parental support, Chambaz (2001) found that young French people have, on average, one of the highest living standards in the European Union.

3. Data and methods

The data set used here comes from the Family and Employer survey which is a national representative survey conducted by INED in 2004-2005. About 9,500 individuals aged from 20 to 49 were interviewed, with a maximum of two persons per household. Along a precise description of socio-demographic characteristics and the current employment situation, this survey includes retrospective work histories: respondents were asked for their employment situation in every year between their 18th birthday and the survey date. For each family event reported (couple formation, childbearing), the individuals were also asked about a precise definition of their employment situation (wage-earner/self-employed, public/ private, type of contract). Some questions deal with the fertility plans.

Our sample, based on a quite homogeneous generation (20-49 years old in 2004), is adapted according to the subject studied. We study fertility plans using a sample composed of all couples (at the survey date). Among them 9% of men and women hold a fixed term contract and 9% of women and 7% of men are unemployed. We use all females and males who have already formed a couple to study timing of first birth, and couples who already have one child

to study second births. Lastly, to study completed fertility, the sample is restricted to individuals who are at least 40 (even if fertility is still not completed, especially for men).

Several methods are also used, including, a logit model for the intention of childbearing, survival analysis, i.e. Kaplan Meier and Cox models for the timing between couple formation and the first child and between first and second childbearing. Lastly ordered multinomial probit is used on the fertility reached at 40 years old.
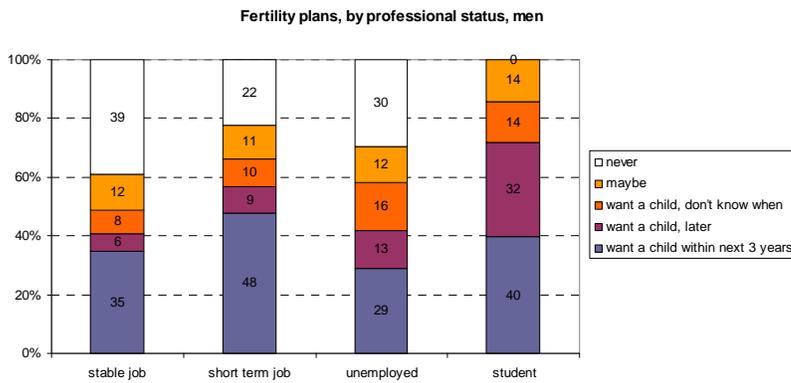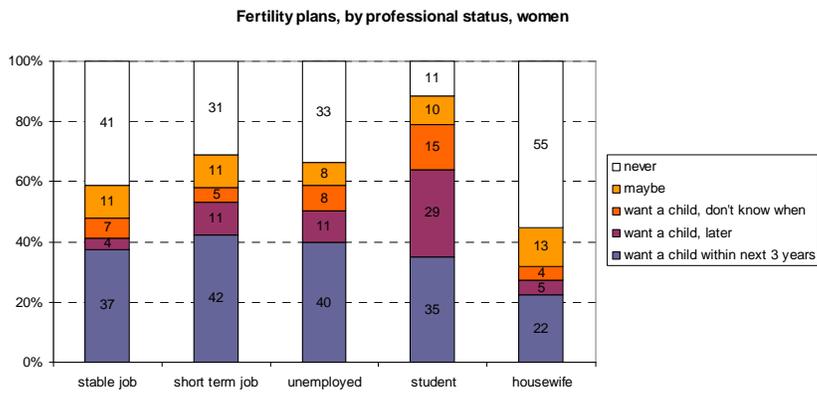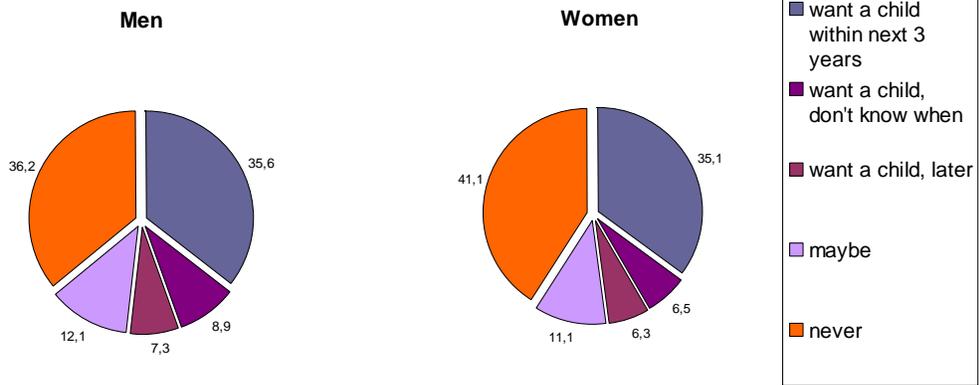
Control covariates are education, generation, religiosity, age at the first union, number of siblings, nationality, and income. The covariates of interest are the occupational history and more particularly the number and length of unemployment spells and short-term job spells, the employment situation at key moments such as union formation and around the births. We produced some longitudinal indicators of uncertainty, e.g. ratio of the number of years with unemployment spells lasting more than 6 months to the number of years since the first job. We did the same with the spells of insecure employment (short-term, apprenticeship or temporary), and inactivity in order to compare.

4. Fertility intentions

Fertility plans are asked to people living in partnership. The question is the following:
Would you like to have or to adopt (a)nother child(ren), now or later? If the answer is "yes" or "yes probably": "In how many years do you intend to have a child" and "Is this timing connected to your professional situation? to your partner's professional situation?"

In our sample, about 30 % of men and women declare they want to have a child during the next 3 years. This restriction to a three-year range is settled in order to limit the analysis to concrete wishes. Fertility plans vary little by gender, except the fact that rather more women do not want a child or another one. Nearly one out of five individuals is undecided about fertility decisions (figure 4). About 10% of men and women do not know when they intend to have a child, and about 10% do not know whether they want a child.

Figure 4: Fertility intentions of men and women

Men

Women

- want a child within next 3 years
- want a child, don't know when
- want a child, later
- maybe
- never

Fertility plans, by professional status, women

Fertility plans, by professional status, men

These plans vary according to professional status. Women in stable jobs have lower fertility plans. But they are older on average, a large share of them has completed their fertility. Few of them intend to postpone fertility, contrary to women in unemployment.

Compared to men in stable jobs, unemployed men intend to delay fertility much more often They are also more hesitant about the timing of fertility. Compared to unemployed women, unemployed men are also more prone to postpone fertility. On the other hand, men holding a fixed-term contract want a child earlier than women in the same position.

A logistic model has been performed on the probability to desire a child during the next three years[18]. We control for the number of children, religiosity, educational level, age; number of siblings, immigrant status and household income. A sample of individuals aged 18-40 and having a partner is used. Separate regressions have been conducted for men and women (table 3).

Table 3 presents the results of the logistic regression that estimates the desire to have a child during the next two years. Being a student clearly decreases fertility plans for both men and women. The preventing effect of studies from becoming parent is particularly high for women. Unemployment matters differently regarding men's and women's fertility intentions: being unemployed decreases men's fertility plans, while it is not significant for women. For women, holding a non stable job reduces fertility plans. It is not significant for men.

But the effect of work uncertainty on fertility intention seems to be short-lasting. Indeed, having been unemployed and having held a non stable job previously have no effect on the current desire to have children.

Other variables introduced in the regression play as expected on fertility plans. Fertility plans increase with the age (at a decreasing rate), the education level, and the number of siblings, while they decrease when people have more than one child. There is not so much difference between men and women regarding those additional variables, with the exception of religiosity which has a positive impact on fertility plans only for women.

Table 3: Fertility plans within 3 years *(logistic regression, OR)*

|	Men	Women
R's job status		
stable job	1.000	1.000
non stable job	1.365	0.653 **
unemployed	0.597 *	0.794
student	1.016	0.226 ***
OLF		1.018
P's job status		
stable job	1.000	1.000
non stable job	0.967	1.298
unemployed	0.874	0.922
student	0.441 **	1.373
OLF	0.739	
N	1526	1820
Pseudo R2	0.227	0.250

---

[18] Another period has been tested (within three years) and results are very similar.

5. Birth timing: Does insecure job history affect timing of childbearing?

Fertility intentions are not necessarily realizations, especially in a context of strong economic constraints such as an insecure job or a job loss. People may fail in their anticipation. For instance, couples may desire a child once both partners have a secure job. They may choose to wait for this double condition. But job uncertainty or unemployment may last longer and they may reevaluate their anticipations or decide to have children anyway in an uncertain context. If they are confident about the future, they may decide to have a child rapidly.

In this section the effect of economic uncertainty on the timing of first and second childbearing is considered. For this purpose, duration models (Cox model) are performed on the timing between first partnership and first child, and the timing between the two first births. We consider that people are at risk of childbearing since their first partnership. We do not take into account people having given birth before their first partnership (only 125 in our sample). Figure 5 represents the distribution of this timing: event and censored. The duration is right-censored if the couple has not children at the date of interview or at the couple dissolution date. After ten years of union, the risk of childbearing is very low, and most of the first births occur in the first five years following union formation.

Figure 5: **Distribution of timing between first partnership and child within this partnership.**
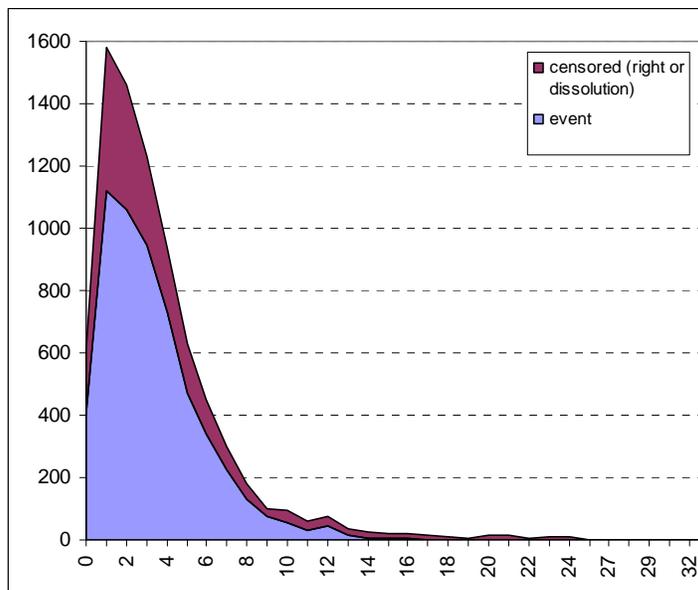
Insecure job or unemployment may affect the timing of childbearing by different ways, according to when it occurs: at the beginning of the couple or after. We test several hypotheses: Does economic uncertainty have a stronger effect on childbearing decisions when it occurs at the beginning of a union or later? Does uncertainty directly affects today's decisions? Does past uncertainty continue to affect today's decisions? In which way? Lastly, does the accumulation of insecure job spells affect the childbearing process?

To answer those questions, two periods are distinguished. First, the professional situation at the beginning of the couple is crucial. Indeed, the couple begins its common life, builds it up according to theses professional statuses. For instance, if one partner is unemployed at the couple formation, the sharing of domestic tasks and the organization of social life and leisure will be different. Solaz (2002) showed that the unemployment of men tends to balance the domestic tasks sharing whereas the female unemployment tends to reinforce the usual unequal sharing between partners. Since there is very huge inertia in housework sharing within a couple and since housework division may have an impact on fertility plans (Mencarini, Tanturri 2006), we expect that the professional situations of partners at the beginning may have a long term impact on fertility intentions and calendar.

Secondly, the current professional situation is also introduced in the model as a dynamic, variable. Indeed, economic uncertainty may also affect the couple childbearing timing by the so-called "surprise effect" (Weiss and Willis 1997).

Lastly, the number and the accumulation of unemployment spells may also delay fertility decision. Note that we do not take into account insecure or unemployment spells that occur before partnership formation.

For this purpose, we use different indicators:

- Professional situation at the beginning of the couple for each partner
- Professional during partnership (last year) dynamic.
- The ratio of unemployment (insecure job)/ activity period dynamic

The following covariates are introduced: religiosity, type of union (dynamic), education, number of siblings, age at first partnership, generation.
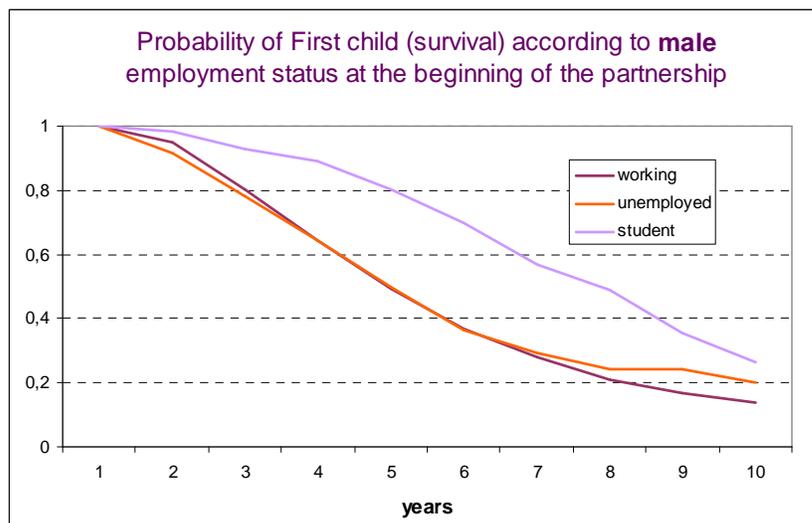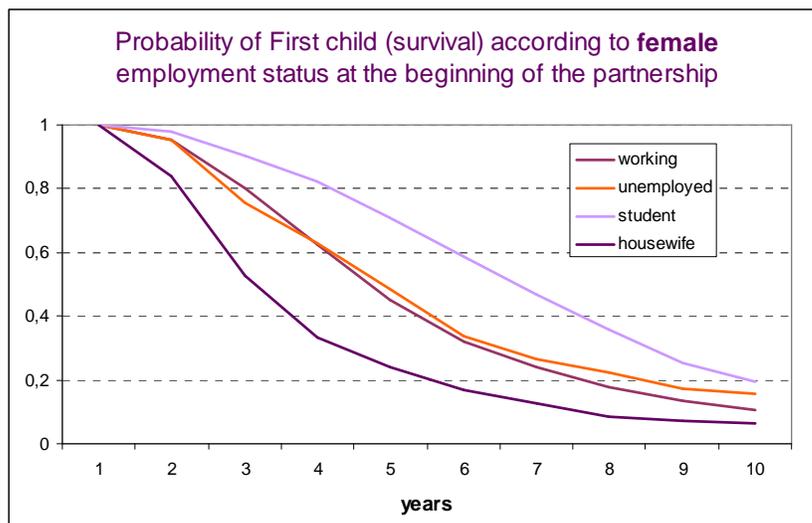
We perform duration models (Cox model) with dynamic variables on the timing between first partnership and the arrival of first child, and on the timing between the two first births.

Figures 6 and 7 represent survival curves as a function of professional situation at the beginning of partnership, for men and women respectively. The timing of parenthood is

similar for people working at the moment of their first partnership and for unemployed people: there is no difference in their rhythm of entry into parenthood, observed for both men and women.

By contrast, a huge difference can be observed in the rhythm of entry into parenthood between students and employed people: from the beginning of the union, students, and men particularly, are the slowest to become parents. 80% of male students are still childless five years after the first partnership, 60% after six years and 50% after seven years. On the contrary, housewives in their first partnership are the fastest to have children: 40% have a child within the first two years of the union, 70% during the first four years after the partnership started.

Figures 6 and 7
.

Probability of First child (survival) according to **female** employment status at the beginning of the partnership

working
unemployed
student
housewife

years

Probability of First child (survival) according to **male** employment status at the beginning of the partnership

working
unemployed
student

years

49

Multivariate regression confirms these first results (table 4). Once controlled for generation and education, religiosity, generation, age at union formation, and the number of sibling, there is no effect of unemployment at the beginning of partnership. There is no memory effect since being unemployed at union formation does not affect the future calendar. Inactive women bring forward births and students, whether men or women. However, being a student really leads to postponement of childbearing, especially for women. The effect is almost nil for males when both partners' characteristics are introduced. One reason is that the pregnancy is more damageable for the studies of women than those of men.

A spell of unemployment or insecure job during partnership (the job situation the previous year) tends to delay first child for men. A lack of confidence in the French labour market and negative expectations related to a high unemployment rate may be a supplementary reason to wait before deciding to have a first child. For women, only precarious jobs have this postponement effect. Unemployed women neither accelerate nor delay pregnancy. In other words, women do not make profit of unemployment to have children.

Other covariates:
Having a low level of education accelerates first child calendar for men as for women, but the educational effect is stronger for women. Coming from a numerous family accelerates fertility for both men and women.

For the arrival of the second child, we do not find any effect for men. For women, there is a reverse effect: having an insecure employment path before first child tends to accelerate the arrival of the second. Women discouraged by job market, may decide to invest in family live quicker.

Table 4: Semi-parametric duration model (Cox) on the timing between first partnership and first child

professionnal situation	MEN			WOMEN		
	at the beginning of partnership	last year *(dynamic)*	ratios *(dynamic)*	at the beginning of partnership	last year *(dynamic)*	ratios *(dynamic)*
Respondant's professionnal situation						
working	*ref*	*ref*		*ref*	*ref*	
unemployed	-0.123	-0.274**		-0.115	0.025	
insecure job	na	-0.163*		na	-0.206***	
Student	-0.226***	-0.486***		-0.253***	-0.631***	
housewife				0.395***	0.282***	
Ratios						
unemployment			-0.292*			0.094
job insecurity			-0.274***			-0.327***
N	3537			4659		
events	2424			3260		

controlled by religiosity, type of union (dynamic), education,
number of siblings, age at first partnership, generation.

Table 5: Semi-parametric duration model (Cox) on the timing between first and second child

professionnal situation	MEN			WOMEN		
	at first child birth	last year *(dynamic)*	ratios *(dynamic)*	at first child birth	last year *(dynamic)*	ratios *(dynamic)*
Respondant's professionnal situation						
working	ref	ref		ref	ref	
unemployed	-0.178	-0.120		0.094	-0.007	
insecure job	na	-0.066		na	-0.042	
Student	-0.011	0.159		-0.005	-0.366***	
housewife				0.242***	0.298***	
Ratios since first child						
unemployment			-0.077			-0.038
job insecurity			-0.231			-0.062
N	2422			3260		
events	1697			2351		

controlled by religiosity, type of union
(dynamic), education, number of siblings, age at
first child, generation.

## 6. Completed fertility: Does unemployment cause missing birth?

Couples facing economic uncertainty may decide to delay births, which can result in a lower number of children. To test the level of fertility according to the labor market situation of partners, we performed a polytomic model on the number of children of people having almost reached the end of their fecundity life, i.e. people aged of 40 years and more.

Figure 8 represents the total number of children by the age of 40 according to individual job history, for men and women respectively. The distribution of people by their number of children is given for those who had never been unemployed from the beginning of their first partnership, for those who where unemployed once, twice, and so on. This figure shows that for women the distribution by number of children is the same, whatever their unemployment history. Therefore, it seems that for women unemployment neither prevents nor leads to having children.

For men, on the other hand, the number of children varies a great deal with unemployment history. Men who have experienced several unemployment spells are more likely to remain childless and less likely to have two children or more. Thus, with respect to these descriptive statistics, it seems that unemployment spells decrease the probability of having children for men.

Results are confirmed by the multivariate analysis, controlled for the number of siblings, religiosity, social group, level of education, number of years in partnership, and number of partnerships (table 6).

Figure 8

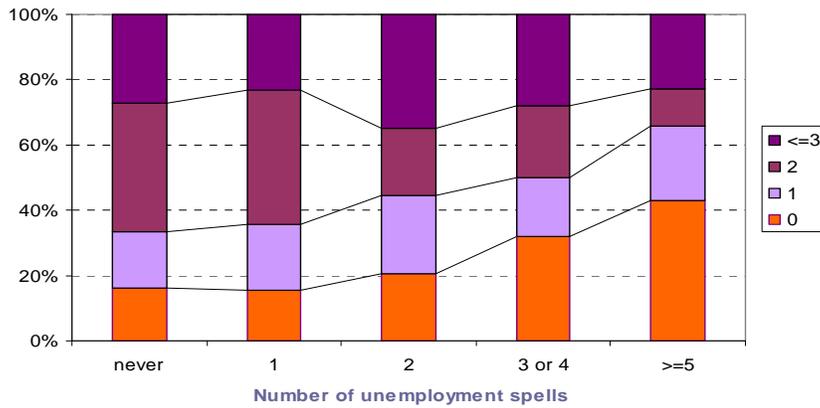Number of children according to **Female** job history
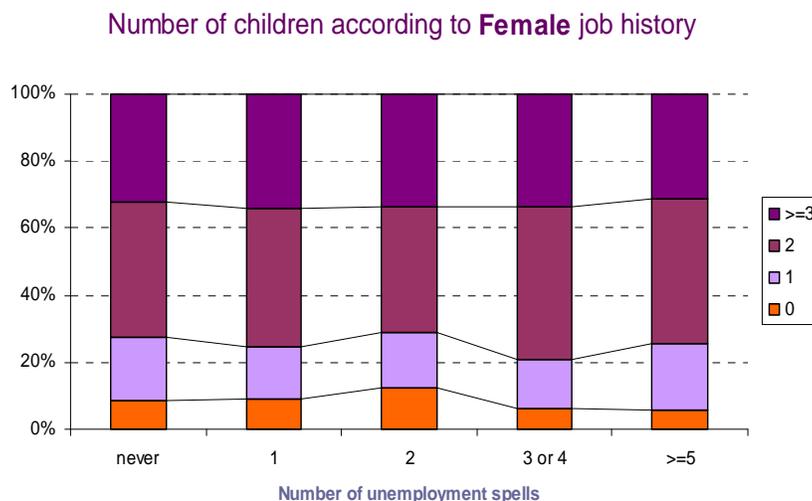
Number of children according to **male** job history

Table 6

	MEN		WOMEN	
ratio unemployment	-1,075	***	-0,238	
ratio insecure job	0,332		0,067	
ratio housewife			1,381	***
Number of siblings	0,108	***	0,082	***
religiosity =high	0,300	***	0,165	***
origine2	-0,092		-0,311	***
origine3	0,107		0,056	
ratio marital life	0,118	***	0,083	***
2 unions and +	0,037		0,112	*
social group				
Farmer	-0,031		0,086	
executives	-0,110		0,126	
intermediate position	-0,156		0,072	
always inactive			-0,371	**
manual worker	-0,015		0,051	
education (ref= low)				
High	0,296	***	0,098	
medium	0,224	***	0,051	
no diploma	0,120		0,114	
/cut1	0,794		0,296	
/cut2	1,568		1,219	
/cut3	2,740		2,523	
/cut4	3,781		3,616	
N	1464		1635	

7. Conclusion

In France, employment uncertainty plays a decisive role in different ways for men and women. Being unemployed decreases fertility plans only for men while women working in insecure jobs reduce their fertility plans. Men take into account their partner's employment status when planning fertility, not women.

Being unemployed has a negative impact on fertility only for men. It delays the timing of entry into parenthood. But, finally, completed fertility is only affected only for the men having been unemployed for a long time during their working life.

Holding a short term contract delays entry in parenthood for both partners but completed fertility is not affected.

Employment uncertainty may influence fertility in opposing directions: it may postpone or accelerate childbearing. The examination of intentions, timing and completed fertility in France demonstrates that employment uncertainty plays a decisive role in different ways for men and women. Unemployment reduces fertility for men while it has no impact for women, for whom short-term jobs lead to a postponement of fertility.

These results reflect that for men it is important to get a job, whatever its quality or stability, before becoming fathers. Women's behaviors are more heterogeneous: those who favor their career intend to get a stable job before becoming mothers, unlike those who favor their family plans. These results illustrate how the social roles of men and women continue to differ in France, men still being the main breadwinners. Moreover, the impact of unemployment is lower than in other countries, probably because France has quite generous family and employment policies.

This study examined the impact of job uncertainty on the timing of fertility during partnership. But job uncertainty most likely leads to postponed couple formation, which in turn postpones fertility. Further research should be carried in order to evaluate the implication of this effect.

References

Blossfeld, H.-P., Klijzing, E., Mills, M., and Kurz, K. (Eds.) (2005), *Globalization, Uncertainty and Youth in Society*. Oxford: Routledge.

Chambaz Christine, 2001. "Les jeunes adultes en Europe: independence résidentielle, activités, resources", in: *Recherche et previsions* n° 68, "Jeunes adultes".

De la Rica, S. and Iza, A. (2005), Career planning in Spain: Do fixed-term contracts delay marriage and parenthood? *Review of Economics of the Household* **3**, 49-73.

Durier S. and Poulet-Coulibando P (2004). "Formation initiale, orientations et diplômes de 1985 à 2002", Economie et statistique*, N° 378-379, pp. 15-33.*

Kieffer Annick, Marry Catherine, Meron Monique, Solaz Anne (2004), "Family Formation in an Uncertain Labor Market : The Case of France" in "Globalization, Uncertainty and Youth in Society", Routledge of London, editors Hans-Peter Blossfeld, Erik Klijzing and Karin Kurz, Melinda Mills, p 101-130.

Kreyenfeld Michaela (2005), "Economic Uncertainty and Fertility Evidence from German Panel Data" *MPIDR Working paper* 2005-034, November.

McDonald, P. (2000) Gender equity, social institutions and the future of fertility. *Journal of Population Research* 17, 1-16.

Mencarini L. and Tanturri M.L. (2006), High Fertility or Childlessness: Micro-Level Determinants of Reproductive Behaviour, *Population*, 4, 2006.

Meron M. and Widmer I. (2001) "Unemployment leads women to postpone the birth of their first child", *Population - E* , 2, March-April 2002, p. 301-330.

Solaz A. (2005), "Division of domestic work: Is there adjustment between partners when one is unemployed? Evidence from French couples", *Review of Household Economics* 43 p.

Toulemon L., Pailhé A. and Rossier C. (2008), « France: High and stable fertility", Demographic Research, special issue.

Weiss, Y. and R. Willis (1997) 'Match Quality, New Information and Marital Dissolution', *Journal of Labor Economics*, 15 (suppl.) s293-s329.