Postponement of recuperation of first births in Europe: the effect of economic and institutional contexts over the life-course

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Abstract

The decline of period fertility below the replacement level in the early 1970s and 1980s in many European countries was largely driven by the postponement of family formation to older ages, which was in turn induced by increasing enrolment of younger generations in education and increasing female labor force participation in a context characterized by limited prospects in the labor market. As a result of the increasing labor force participation of women and the restructuring of the demand for labor, family policies have become increasingly important to reduce the costs and/or opportunity costs related to family formation. Combining longitudinal micro-data from the European Social Survey with contextual data from the OECD and the Comparative Family Policy Database, this paper uses multilevel discrete-time hazard models to analyze the impact of variations in macro-level unemployment rates and family policies on first birth hazards of 6906 women in 14 European countries between 1975 and 2005. The results provide empirical support for recession-induced postponement of first births at younger ages in all educational groups. Family allowances and childcare availability, on the other hand, show significant positive effects on first births in older age-groups, suggesting that family policies affect the amount of fertility recuperation taking place at older ages. No variation of policy effects was found in terms of educational level. A comparison of the family policy effects suggests that the observed between-country differences in terms childcare enrolment have a larger impact on fertility differences than between-country variation in terms of family allowances.

Keywords: Fertility - postponement – recuperation - unemployment – family allowance – childcare

Word count: app. 7400 words (excluding tables and references)

1. Introduction

Postponement of first births since the early 1970s has lead to mean ages at first birth increasing to 28-30 years in most European countries and an increasing number of men and women delaying their first birth after age 35 (Council of Europe 2005). The postponement of fertility in Europe coincides with expanding tertiary education and unemployment levels rising rapidly as a result of successive economic recessions in the early 1970s, the mid-1980s and the mid-1990s (OECD 2011). The economic crisis emerging in 2008 caused speculation about further postponement of fertility and a recession-induced baby bust in countries affected by the economic downturn. The pathways through which economic context delays family formation include rising unemployment, falling employment stability, rising uncertainty about the future, changing housing markets, but also prolonged

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enrolment in education and delayed union formation (Sobotka et al. 2011). Whereas increasing education and adverse labour market conditions have contributed to the postponement of fertility, family policies that reduce the costs and opportunity costs associated with family formation are increasingly associated with the recuperation of fertility at older ages. This study aims to explore i) how economic context has affected entry into parenthood between 1970 and 2005, ii) how recession-induced postponement of fertility varies by age, educational level and work status, iii) whether family policies have supported recuperation of fertility later in the life-course, and iv) whether the effects of family policies vary in terms of age, educational level and employment status.

2. Economic conditions, institutional context and fertility outcomes

Stable employment, relatively high income and reasonable housing are often considered to be the key prerequisites for family formation and fertility in contemporary Europe (Lappegard & Ronsen, 2005; Sobotka, Skirbekk, & Philipov, 2010). Given the rising educational attainment and labor force participation of women over the last few decades, high fertility has also become increasingly associated with social policies that affect the opportunity costs of childbearing by providing access to provisions that reduce the incompatibility between women's roles in the family system and individually-oriented institutions such as the educational system and particularly the labor market (McDonald, 2000). Economic recession – being typically associated with increasing unemployment and employment instability, increased uncertainty and reduced or even reversed income growth – touches directly on both income and the opportunity costs associated with childbearing and is therefore expected to cause temporal variation in fertility outcomes. In a review of the relevant literature, we focus specifically on the relation between income, opportunity costs and childbearing as it provides the key to understanding not only the impact of the varying economic context on fertility outcomes, but also variations in the sign and strength of this effect in terms of age, gender, educational level and societal context. We also draw attention to the intermediate factors in the relation between economic context and fertility behavior, such as union formation and possibility to establish and independent household. Before turning to opportunity costs, however, we briefly consider enrollment in education as this constitutes one of the pathways through which the economic context is likely to have an impact on the tempo and quantum of fertility.

Enrollment in education, recession and fertility

Education has a multifaceted impact on fertility outcomes where a distinction can be made between the effect of educational enrollment on the one hand, and the long-term effects related to level and field of education on the other (Lappegard & Ronsen, 2005). The 'enrollment'-effect refers to the fact that being in education significantly reduces the rates of entering a union, getting married or entering parenthood compared with non-students (Hoem, 1986). Apart from educational activity, both the level and field of education are assumed to be correlated with a variety of factors likely to have longer-term effects on fertility outcomes such as value orientations and choice of household type (Lesthaeghe & Van De Kaa, 1986), fertility preferences (Van De Kaa, 2001; Van Peer, 2008), career tracks and labor market opportunities, as well as income trajectories (Becker, 1981; Liefbroer & Corijn, 1999).

Sobotka et al. find that economic downturn is likely to prolong time in education and thus delay childbearing (Sobotka, et al., 2010). Lacking employment opportunities, adolescents may continue education as the value of human capital increases in a competitive labor market and education reduces both the risk of unemployment and employment instability. Particularly the expansion of tertiary education is likely to have both short-term and long-term effects on the timing of births. In the short-term, the cultural incompatibility between the roles of student and parent will reduce birth hazards for the duration of enrollment in education. In the long run, however, particularly the orientation of adolescents to career-paths typical of the higher educated is likely to entail more sizeable delays in family formation as higher educated generally postpone family formation until a stable position in the labor market been established (cfr. infra). With the higher educated typically postponing the transition to parenthood well into their late twenties and early thirties (see Neels &

De Wachter, 2010 for an illustration of educational differentials in the timing of fertility for Belgium), it is evident that the effect of recession-induced enrollment in higher education on fertility may have a significant effect on births hazards for time-lags exceeding the actual time-interval of enrollment in education by several years.

Education, opportunity costs and fertility

Theories on the impact of income and opportunity costs on fertility behavior over the last few decades have revolved to a considerable extent around Becker's new home economics. At the core of Becker's argument is the household production model where household members purchase goods from the market subject to a budget constraint and combine these with time of household members to produce commodities such as children from which household members derive utility. An increase in the price of goods provides an incentive to produce less of those commodities for which these goods constitute an important input. According to Becker, the rising educational attainment of women has increased their earning potential, leading in turn to higher participation in the labour force. As the cost of time spent on nonmarket activities increases, the relative cost of children increases as well, thus reducing the demand for children (Neels, 2006). Because these opportunity costs are considered to be more sizeable among the higher educated, the effect of education on fertility is assumed to be negative. On the other hand, the income effect associated with higher wages may well outweigh substitution effects and increase fertility, leading to a positive effect of education on fertility. The effect of education thus depends on the compatibility of labour force participation and family formation, which affects the balance of income effects and opportunity costs.

The explanation of macro-level fertility trends in Western countries offered by Becker's economic reading has not remained uncontested and a number of restrictive assumptions have been challenged as a result. Liefbroer and Corijn (1999) consider the static view on the incompatibility of family life and labour force participation to be the main factor limiting the validity of the argument from being a more general explanation of the relation between educational attainment and family formation. Based on a review of the literature they suggest that the relation between labour force participation, opportunity costs and family formation is not only contingent on human capital or educational attainment, but also on age, gender, the event in the life-course considered and the societal context in which family formation takes place.

Income effects, opportunity costs and gender

Variation of the relationship between income, opportunity costs and demographic outcomes in terms of gender is related to gender roles and particularly the gendered division of labour in the family. As family formation is more likely to reduce the time spent on paid labour by women than men, an income effect is assumed to prevail in case of men, whereas opportunity costs are assumed to outweigh income effects in the case of women. Hence, the effect of human capital on fertility is assumed to be negative for women, whereas a positive effect is likely to emerge for men. Because entry into cohabitation or marriage is less likely to raise compatibility issues with labour force participation than entry into parenthood, the negative effect of human capital is further assumed to be more pronounced in relation to fertility decisions compared to other events.

The gendered impact of income and opportunity costs thus suggests that increasing unemployment and employment instability associated with economic recession may also translate into a gendered response to variation in economic context. Recession adversely affects the income position of men in their role of breadwinners, thus negatively affecting family formation in times of economic downturn and giving rise to a procyclical relation between economic context and fertility levels. For women, on the other hand, reduced employment opportunities may well reduce opportunity costs and thus increase fertility, giving rise to weaker procyclical or even a counter-cyclical relation between economic context and fertility levels.

Although literature provides some evidence of high unemployment benefits enhancing birth hazards (Vikat, 2004) and unemployment giving rise to higher second and third birth hazards in Norway (Kravdal, 2004), empirical evidence has granted little support for theories suggesting a

counter-cyclical relationship between economic trends and fertility (Sobotka, et al., 2010). Most research typically suggests a procyclical relationship with economic recession entailing a decline of period fertility levels in the years immediately following the economic downturn. Although the procyclical character of the relationship between economic trends and fertility may point in the direction of preponderance of the income effect on fertility among men, the interpretation of opportunity costs in terms of (limited) forgone earnings during the economic downturn is probably too narrow, as it ignores the uncertainty associated with economic recession regarding long-term career prospects and income trajectories. Put differently, the loss of earnings as a result of having children may be reduced during recession (i.e. reduced opportunity costs), but this effect is unlikely to prevail if having children too early may hamper future career development.

Opportunity costs, career paths and the timing of fertility

Becker's view of changing fertility patterns focuses predominantly on the level of fertility and has remained somewhat agnostic of timing issues (Lappegard & Ronsen, 2005). In addressing the problem of causal ambiguity between female employment and delayed childbearing, Blake and Ní Brolcháin already stated that, given the known compatibility issues in this area, decisions concerning each of these activities are almost certainly undertaken in the context of a decision about the other (Blake, 1965; Ní Brolcháin, 1993). As a result, women may well adopt specific strategies aimed at combining labour force participation and family formation throughout the life cycle. Rather than taking decisions sequentially, women may attempt to accommodate work participation and family formation to each other by choosing different modes of combining them: by accelerating childbearing, foregoing the labour force in the interim, but returning soon after completion, or, maintaining a greater attachment to the labour force by working between births rather than having a longer spell out of the labour force for childbearing (Neels, 2006). Liefbroer and Corijn (1999) suggest that higher educated people are more likely to enter long-term career tracks where the increase in earnings is gradual, because age and experience are important determinants of the wage rate. This combination of factors makes it in turn unlikely that highly educated women will have children early in their careers as this would presumably hamper their prospects of entering career tracks typical for higher educated people (Liefbroer & Corijn, 1999). Hence, higher educated women are assumed to postpone childbearing up to a point where they consider themselves to be sufficiently established in a career track so that taking a temporary break from the labour market is also considered less damaging for future career development (Kreyenfeld, 2000). Similarly, Lappegard and Ronsen (2005) state that for women in Norway, who usually return to work when their youngest child is quite small, it has become increasingly important to get established in the labour market before becoming a mother. Given these considerations, we thus expect higher educated women to delay parenthood after graduation until some foothold on the labour market has been gained. As such job opportunities are determined by economic conditions, particularly for younger people entering the labour market, we expect higher educated women to further delay childbearing in periods of adverse economic conditions (Neels, 2010; Sobotka, et al., 2010).

Studies relying on aggregate-level measures of economic recession and fertility as well as results of micro-level research seem to grant support for the idea that reduced employment opportunities and uncertainty about longer-term prospects constitutes an important pathway through which the economic contexts affects timing of fertility. At the macro-level, measures of unemployment and consumer confidence have been found to reflect the impact of recession on fertility outcomes more closely than more general indicators as GDP decline (Sobotka, et al., 2010). Similarly, micro-level studies show that variation in aggregate-level unemployment rates negatively affect birth hazards (Adsera, 2005; B. Hoem, 2000; Kravdal, 2002). Research combining the effects of unemployment at the individual-level and aggregate-level further indicates that the effects of the latter persist after controlling for unemployment spells at the individual-level, suggesting that more general perception of economic uncertainty (employment instability, potential downward income mobility,…) plays an important role in establishing the relationship between economic conditions at the aggregate-level and individual fertility outcomes.

Opportunity costs, income and societal context

The effect of economic context on fertility outcomes through its impact on income and opportunity costs is in several ways contingent in terms of societal context. This societal context encompasses a broad range of potentially relevant policies and institutional arrangements including family benefits, availability of childcare and parental leave arrangements, housing policy, unemployment and means-tested benefits as well as policies and institutional arrangements regulating access to the labour market for young adults.

In a recent literature review, Gauthier considers the effect on fertility behaviour of policies directly targeted at families with children such as direct and indirect cash transfers for families with children, means-tested child welfare benefits, maternity and parental leave benefits, as well as childcare facilities and related subsidies programs. Drawing from macro-level as well as micro-level studies, Gauthier concludes that these policies may have an effect on families but that effects tend to be small of magnitude and they may possibly have an effect merely on the timing of fertility rather than on completed family size (Gauthier, 2007). Gauthier draws attention, however, to severe limitations of the studies considered as most usually rely on global measures of family policies while failing to consider individual variations in access to, and receipt of benefits (Gauthier, 2007). As a result, Gauthier concludes that systematic knowledge on the impact of policies on fertility behaviour is still limited and calls for complex modelling of the causal relationship between policies, female labour force participation and fertility. Neyer and Andersson (2008) similarly stress the need to consider the (differential) uptake of policy measures under consideration. Although social class differences in policy response have thus received less attention in the study of policy effects on fertility, results for Belgium suggest that the uptake of arrangements such as child care and parental leave is not neutral in terms of socioeconomic background. Use of formal childcare arrangements is reported to be much lower in families at the lower end of the income distribution and higher educated women are also overrepresented in the population taking up (parental) leaves (Desmet, Glorieux, & Vandeweyer, 2007; Ghysels & Van Lancker, 2009).

Although the literature thus provides mixed results on the overall impact of policies on actual fertility behaviour, available empirical evidence suggests that policies may reinforce or even reverse the impact of economic recession on fertility outcomes. In general, the impact of education and female labour force participation is assumed to be weaker in societies where gender equity has become a dominant cultural value and in societies that provide better structural opportunities to combine work and family (Liefbroer & Corijn, 1999). In similar vein, Esping-Andersen points out that the Nordic countries, but also France and Belgium, where social policies since the early 1970s have actively pursued the de-familialisation of care burdens (e.g. through availability of child care) have been characterised by higher fertility levels, at least from a comparative European perspective (Esping-Andersen, 1999). A comparison of patterns of fertility and labour force participation in Denmark and Germany similarly suggests that the degree to which social policy supports dual-earners in their combination of work and family, is likely to mediate the relationship between educational attainment and childbearing (Andersson, Kreyenfeld, & Tatjana, 2009). Although social democratic welfare regimes are generally considered to ease the worker-mother conflict – and thus stimulate recuperation of fertility at older ages – Neyer and Andersson suggest that the income-centred parental leave system in Sweden has put additional emphasis on establishing a secure labour market position prior to family formation, thus (unintentionally) reinforcing the procyclical character of Swedish fertility in the 1990s. In contrast to the parental leave system that reinforced the procyclical character of Swedish fertility, the introduction in the mid-1980s of a home-care child care allowance to parents who stay at home with their child under age 3 in Finland provided an attractive alternative to unemployment and shrinking employment opportunities for many women, actually giving rise to a slight increase of period fertility at the time of the economic recession in the mid-1990s. Although policies that reduce unemployment growth and make labour markets more open and flexible for young adults can be assumed to limit the adverse effects of recession on fertility the contrasting examples from Sweden and Finland clearly illustrate that specific policies may affect the actual impact of unemployment on fertility by increasing income or opportunity costs.

3. Research questions and hypotheses

Based on the results of the literature review, the following hypotheses can be formulated concerning the effect of economic recession on postponement of first births in Europe:

a) The increase of unemployment, employment instability and economic uncertainty have been identified in the literature as important pathways through which economic recession adversely affects fertility levels. With empirical evidence granting little support for theories suggesting a countercyclical relationship between economic context and fertility, we expect a negative relationship to emerge between variation in aggregate-level unemployment rates and first birth hazards. As a more general indicator of economic uncertainty we furthermore expect the negative affect of macro-level unemployment rates on birth hazards to persist after controlling for delayed entry into the labor market at the individual level;
b) As the effect of unemployment on fertility has been associated with delayed entry into the labor market during periods of economic downturn, we expect the negative effect of aggregate-level unemployment rates on first birth hazards to be more pronounced among younger age-groups.
c) The negative effect of recession is further expected to vary in terms of human capital and educational level. As the highly educated are more inclined to postpone family formation until a stable labor market position has been secured, we expect recession to reinforce postponement of fertility particularly for this group as they will avoid jeopardizing entry into long-tern career tracks typical of the higher educated.

The literature review concerning the relationship between societal context and fertility allows us to formulate the following assumptions concerning the recuperation of fertility:

d) As increasing educational attainment and the restructuring of the demand for labour have increased the costs and opportunity costs associated with family formation, we expect recuperation of fertility to be stronger in institutional contexts characterized by family policies reducing the costs and opportunity costs of childbearing through family allowances and childcare facilities.
e) As increasing education and adverse labor market conditions negatively affect fertility at younger ages, we expect the positive effects of family policies on the recuperation of fertility to be particularly relevant in the older age-groups.
f) As family formation is potentially associated with high opportunity costs among the higher educated whereas the restructuring of the demand of labor has affected the labor market position of weaker socio-economic groups, we expect family allowances to support family formation among lower socio-economic strata and childcare facilities to reduce opportunity costs and positively affect birth hazards among higher educated women.

4. Data & Methods

Data and response rate

The analysis uses data from the European Social Survey (ESS). The ESS is a general purpose, repeated cross-sectional survey that is currently organized in over 30 countries across Europe. The survey covers a broad array of subjects with the aim to chart and explain the interaction between Europe's changing institutions and the attitudes, beliefs and behavior of its diverse populations. The analysis uses data from the third round of the ESS collected in 2006 which contained a rotating demographic module providing detailed information on the life course, the timing of key life-events, attitudes to ideal ages, as well as the youngest and oldest ages considered suitable for an array of life events. The analysis uses data on the first birth interval – i.e. the time from entry into the risk set at age 15 until the first birth or until censoring at age 49 - for women 14 European countries: Austria (AT), Belgium (BE), Denmark (DK), Finland (FI), France (FR), Germany (DE), Ireland (IE), Netherlands (NL), Norway (NO), Portugal (PT), Spain (ES), Sweden (SE), Switzerland (CH) and the United kingdom (GB). For the analyses 6906 women are observed during 110930 person-years during which 5848 first births were observed (table 1).

TABLE 1 ABOUT HERE

Individual-level covariates

The multivariate models of first birth hazards include following individual-level covariates: i) age, ii) educational level, iv) duration since first entry into the labor market and v) duration since first entry into a co-residential partnership (table 2). The *educational variable* is based on the number of years of full-time education completed. Since educational classifications are difficult to compare across countries, the number of years in full-time education was collapsed into four categories representing the quartiles of the educational distribution in each of the countries considered. The first quartile serves as the reference category throughout the analysis.

The time-varying covariate on *union status* measures the duration in period difference since the first cohabitation with a partner or spouse for a period of 3 months or more. Since first births are more frequent during the first years of cohabitation – resulting in a skewed distribution of first birth hazards – duration since first cohabitation is collapsed into five categories: i) never cohabited or first year of cohabitation (reference category), and subsequently ii) 1-5 years, iii) 6-10 years, iv) 11-15 years and v) 16 years or more since first cohabitation.

The time-varying covariate on *employment status* measures the number of years in period difference since the first entry in paid employment or paid apprenticeship of 20 hours or more per week for a period of at least three months. Given the nonlinear relationship between birth hazards and duration since first employment, the latter is collapsed into six categories: i) never had paid employment or employed for less than 5 years (reference category) and subsequently ii) 5-9 years, iii) 10-14 years, iv) 15-19 years, v) 20 years or more since first employment. To test cross-level interactions with economic and policy indicators, employment status was collapsed to 2 categories (never employed or employed less than 5 years versus 5 years or more since first entry into the labour market).

TABLE 2 ABOUT HERE

Macro-level contextual variables

The longitudinal micro-data from the ESS are complemented with contextual information on unemployment drawn from the Organization for Economic Co-operation and Development (OECD, 2010). For the countries considered, the OECD-database provides time-series of the unemployment rate, calculated as a percentage of the civilian labor force, between 1956 and 2005. Previous research indicates that unemployment and consumer confidence more closely reflect the impact of economic recession than more general economic indicators as GDP (Van Giersbergen and De Beer 1997; Adsera and Menendez 2009), with unemployment being closely related to the postponement of first births (Adsera 2005). In addition, two indicators on family policies are included in the analysis. The first indicator measures family allowances for a first birth in each of the countries considered between 1990 and 2005 and is drawn from the Comparative Family Policy Database (Gauthier 2010). Because family allowance rates vary with age in several countries, the family allowances for a first child refer to a child aged 12 years old (Gauthier 2010). The second policy indicator measures enrolment in formal childcare arrangements of children aged 0-2 years between 1990 and 2005 (Luci and Thevenon 2012). All contextual variables have been lagged by one year. Unlike previous studies that have linked longitudinal micro-data on family formation to cross-sectional data on family policies (e.g. Van Bavel et al. 2010), the availability of longitudinal policy indicators for this study reduces measurement error because fertility outcomes are linked to the economic and institutional circumstances effectively prevailing at the time when the first child was conceived.

Model specifications

The analysis uses multilevel discrete-time hazard models to assess the impact of variation in unemployment rates and family policies at the country-level on first births hazards in the countries considered (Allison 1982, Singer & Willett 2003, Rasbasch 2009). Two levels have considered for the analysis with person-years (level 1) being nested in countries (level 2). Three sets of models have

been estimated. The first set (models 1-6) focuses on the effect of variation in the unemployment rate on first birth hazards of women aged 15-49 years between 1975 and 2005 and explores cross-level interactions between individual-level characteristics and variations in economic and labor market context. Similarly, the second set of analyses (models 7-12) considers the effect of family allowances on first birth hazards of women aged 15-49 between 1990 and 2005 and explores cross-level interactions between family allowances and time-constant and time-varying individual-level characteristics. Finally, the third set (models 13-16) considers the effect of childcare enrolment on first birth hazards of women ages 15-49 between 1990 and 2005. Consistent with previous models, the analysis also considers cross-level interactions between childcare enrolment and individual-level covariates.

All models were estimated using the Runmlwin-command in Stata (Leckie 2011). The multilevel hazard models use a logit link function. As a result, the antilog of the parameter estimates, e(b), allows for an interpretation in terms of odds-ratios. All models include a cubic effect of age on first birth hazards as the baseline hazard function as well as an education*baseline interaction to allow for differential fertility schedules by level of education. All models include random intercepts and random slopes for the linear effect of age at the country-level.

5. Results

Between-country variation in unemployment

Temporal variation in unemployment rates in European countries suggests that adverse economic and labour market conditions may have contributed to the acceleration of fertility postponement particularly in the mid 1980s and the early 1990s: whereas unemployment levels in most European countries were generally below 5 per cent of the civilian labour force before 1975 – apart from Ireland that already shows higher unemployment rates throughout the 1970s – unemployment rates in most countries rapidly increased after 1975 (figure 1). In the 1980s, the unemployment rate exceeded 10 per cent in Belgium, Denmark, the Netherlands and the United Kingdom and even 15 per cent in Ireland and Spain, with unemployment rates generally being substantially higher in younger age-groups. Also in the 1990s, unemployment rates soared above 10 per cent of the labour force in Belgium, Denmark, France, Sweden and the United Kingdom and even 15 per cent in Finland, Spain and Ireland. Although unemployment rates again declined below 10 per cent in most countries in the 2000s (but never to the low levels observed in the early 1970), unemployment levels continued to exceed 10 per cent in Germany and Spain.

FIGURE 1 ABOUT HERE

The effect of unemployment rates on first birth hazards

Model 1 assesses the effects of educational attainment on first birth hazards of women aged 15-49. Consistent with previous research, higher levels of education are associated with significantly lower birth hazards at younger ages (model 1). Controlling for educational level, a significant procyclical relationship emerges between economic context and first birth hazards. Among women aged 15-49, a 1 percent increase in the unemployment rate reduces first birth hazards by 2 per cent ((1-0.980)*100). A 10 percentage point increase in the unemployment rate - routinely witnessed in European countries between the mid-1970s and mid-1980s (figure 1) - reduces first birth hazards by 18.6 per cent in the broad age-group of women aged 15-49. The negative effect of macro-level unemployment rates on first birth hazards remains significant when controlling for entry into the labor market at the individual level (model 2). Women who have never or only recently (<5 years) entered the labor market (reference category) show the lowest first birth hazards. Compared to this group, first births hazards are significantly higher among women who first entered the labor market 5-9 years earlier (an increase in first birth hazards of 29.3 per cent relative to the reference category), women who first entered the labor market 10-14 years earlier (a 33.1 per cent increase) and women who entered their first job 15-19 years earlier (an 18 per cent increase). For women who started

their first employment 20 years earlier or more, the first birth hazards are no longer significantly higher than the reference category. The negative effect of the macro-level unemployment rate is also resistant to additional controls for duration since the first entry into a co-residential partnership (model 3). Compared to women who never entered a co-residential partnership or entered their first cohabitation less than one year earlier (reference category), first births hazards are significantly higher among all categories of women who first entered a co-residential partnership more than one year earlier. Among women who entered their first co-residential partnership 1-5 years earlier, 6-10 years earlier and 11-15 years earlier, first birth hazards are 756 per cent, 563 per cent and 408 per cent higher compared to the reference category. Also for women who entered their first co-residential partnership more than 16 years earlier, birth hazards are 223 per cent higher than among women who never cohabited. Controlling for the duration since first entry into a co-residential union in model 3, the effect of entry into a first job weakens considerably, suggesting that entering the labor market and entering a co-residential union are strongly correlated, but also that duration since first entry into a co-residential union is a stronger predictor of first birth hazards than duration since first employment.

TABLE 3 ABOUT HERE

Models 4, 5 and 6 investigate cross-level interactions between the macro-level unemployment rate and individual-level characteristics. The model including the interaction between the macro-level unemployment rate and age (model 4) indicates that adverse economic conditions do not affect the process of family formation evenly over the life-course. Particularly women under age 30 show significantly lower first birth hazards in periods of high unemployment. Among women aged 20-24, a 1 per cent increase in the macro-level unemployment rate decreases first birth hazards by 4.2 per cent. Similarly, a 10 per cent increase in the unemployment rate decreases first birth hazards in this age category by 34.9 per cent, suggesting that the deterioration of labor market conditions witnessed in the 1970s and 1980s contributed substantially to postponement of family formation in the countries considered. After age 30, an increase of the macro-level unemployment rate entails a significant positive effect among women aged 30-39 suggesting that the deterioration of labor market prospects and lowering of opportunity costs may provide a stimulus to initiate family formation in the older age groups. The model including the interaction between educational level and the macro-level unemployment rate (model 5) indicates that adverse economic and labor market conditions have a negative effect on entry into parenthood in all the educational categories considered, with the effect hardly being more articulated among the higher educated. Finally, no significant interaction effect was found between the macro-level unemployment rate and the time-varying indicator of employment status at the individual level.

Between-country variation in family policy packages

With female educational attainment and labour force participation rising in recent decades, high fertility is increasingly associated with gender equity and social policies that reduce the incompatibility between women's roles in the family and the labour market (Andersson et al. 2009; Esping-Andersen 1999; McDonald 2000). Trends in family allowances and childcare enrolment reveal strong between-country variation, however, in family policy packages (figures 2 and 3). Family policies in German-speaking countries (Austria, Germany and to a lesser extent Switzerland) have been characterised by increasing family allowances for first children between 1970 and 2008, while enrolment of children aged 0-2 years in childcare has remained low. In terms of family allowances, the Northern European countries (Norway, Sweden, Denmark and Finland) take an intermediate position, together with the Anglosaxon countries (Ireland, United Kingdom), Belgium and France. At the lower end of the spectrum, Spain and Portugal have been characterised by low family allowances throughout the period considered. Between-country variation shows a different pattern in terms of childcare enrolment with enrolment being highest in a number of Northern European countries (Denmark, Sweden, Norway) together with France, and more recently Spain and Portugal. Belgium, Ireland, Finland and the United Kingdom take an intermediate position with Austria and Germany showing the lowest childcare enrolment rates.

FIGURES 2 AND 3 ABOUT HERE

The effect of family allowances on first birth hazards

Models 7-12 consider the effect of family allowances on first birth hazards between 1990 and 2005 in the 14 EU-countries considered (table 4). Among women aged 15-49 years, a 1 EUR increase in the family allowance for a first birth significantly increases birth hazards by 0.2 per cent (model 7). A 125 EUR difference in the family allowance – the maximum between-country difference observed in 2005 – increases first birth hazards 23.2 per cent ($(1.001672^{125}-1)*100$). The effect of family allowances remains significant when controlling for duration since first entry into the labor market (model 8). Compared to women who never or only recently entered the labor market (<5 years), first birth hazards are significantly higher for women who entered their first job 5-9 years earlier (a 30.5 per cent increase), women who their first job 10-14 years earlier (a 37.5 per cent increase) and women who entered their first job 15-19 years and 20 years earlier (increases of 23.9 and 19.2 per cent compared to the reference category respectively). The effect of family allowances is no longer significant when controlling for duration since first entry into a co-residential union (model 9). Similar to previous models, entry into a co-residential union is associated with significantly higher first birth hazards, particularly in the first 10 years following the entry into a co-residential union (increases of 671 and 576 per cent respectively compared to women who have never entered a co-residential union). Also women who have entered their first co-residential union more than 10 years earlier have significantly higher first birth hazards than the reference category (increases of 382 and 241 per cent relative to the reference category among women who first entered a co-residential union 11-15 years earlier and women entered their first cohabiting union more than 16 years earlier).

TABLE 4 ABOUT HERE

Models 10, 11 and 12 look into cross-level interactions between family allowances and individual-level characteristics. The model including the interaction between family allowance and age (model 10) indicates that the positive effect of family allowances are particularly pronounced among women aged 30-34 and women aged 35-39 years: in these age-groups a 125 EUR difference in family allowances significantly increases first birth hazards by 35.3 and 53.1 per cent respectively. Additional models including the interaction between family allowances and education (model 11) and the interaction between family allowances and individual-level employment status (model 12) do not yield significant improvements.

The effect of childcare enrolment on first birth hazards

Models 13-18 consider the effect of childcare enrolment on first birth hazards between 1990 and 2005 (table 5). Among women aged 15-49 years, a 1 per cent increase in childcare enrolment significantly increases first birth hazards by 0.8 per cent (model 13). A 59.5 per cent difference in childcare enrolment – the difference observed between Austria and Denmark in 2005 – is associated with a 60.7 per cent difference in first birth hazards. The effect of childcare enrolment remains significant when controlling for duration since entry into a first job (model 14) and duration since first entry into a co-residential partnership (model 15). Similar to previous models, entry into the labour market is associated with an increase of first birth hazards. Compared to women who never entered the labor market or entered their first employment less than 5 years earlier, first birth hazards are significantly higher among women who entered their first job 5-9 years earlier (an increase of 30.4 per cent), 10-14 years earlier (an increase of 37.3 per cent) and 15-19 years earlier (a 23.3 per cent increase). Births hazards of women who first entered the labor market 20 years earlier do not differ significantly from the reference category (model 14). In line with previous results, the effect of employment is no longer significant when controlling for duration since first entry into a co-residential partnership (model 15). Entry into a co-resident partnership significantly increases first birth hazards compared to women who never cohabited with a partner of cohabited less than 1 year.

TABLE 5 ABOUT HERE

Models 16-17 consider cross-level interactions between childcare enrolment and individual-level covariates. The model including the interaction with age indicates that childcare enrolment has significant positive effects in the age-groups 25-29, 30-34 and 35-39 with a 1 per cent increase in childcare enrolment increasing first birth hazards by 0.5 to 1.2 per cent. A 59.5 per cent difference in childcare enrolment rates is associated with a 40.1 per cent increase in first birth hazards among women aged 25-29 ($(1.005683^{59.5}-1)*100$), a 111.0 per cent increase among women aged 30-34 ($(1.012610^{59.5}-1*100$) as well as a 64.8 per cent increase of first birth hazards among women aged 35-39 ($(1.008433^{59.5}-1)*100$). The model including the interaction with educational level indicates that childcare enrolment increases first birth hazards in all educational groups (model 17). The interaction with the time-varying indicator of employment status show no differential effect of childcare enrolment between women who never or recently (<5 years) entered the labor market and women who entered their first job 5 years earlier or more.

6. Discussion

In line with previous research, the results indicate that increasing education contributes to postponement of parenthood to older ages with first birth hazards being significantly lower among higher educated women at younger ages. Neels et al. (2010) and Ni Brolchain et al. (2012) show that increasing education is responsible for 40 to 50 per cent of fertility postponement in Belgium, France and the United Kingdom.

In addition, entry into parenthood is postponed under adverse economic conditions and high unemployment: a 1-per cent increase in the unemployment rate reduces first birth hazards by app. 2 per cent. A rise in unemployment rates with 10 per cent – frequently encountered in countries throughout Europe throughout the 1970s and 1980s – reduces first birth rates by 18.6 per cent. Consistent with earlier findings by Hoem (2000) and Kravdal (2002), the effect of macro-level unemployment remains significant after controlling for the postponed entry into the labor market at the individual level. Recession induced postponement of parenthood is particularly concentrated in the younger age-groups. The unemployment rate no longer has a significant negative impact on first birth hazards after age 30. Models considering the cross-level interaction between the macro-level unemployment rate and education indicate that family formation is negatively affected in all educational groups by adverse labour market conditions. Considering trends in unemployment rates in the 14 EU-countries considered and the negative effect of unemployment on first birth hazards, deteriorating labour market conditions in the 1980s and 1990s seem to have been particularly relevant for fertility postponement in Europe.

Whereas the expansion of education and the increase of female labour force participation in a context of limited economic growth have contributed to fertility postponement and low period fertility levels in the 1970s and 1980s, the availability of provisions that reduce the mother-worker conflict have increasingly been considered important to reduce the opportunity costs of parenthood. In this respect, the time-series on childcare enrolment show substantial variation between European countries with high enrolment rates being observed in a number of Scandinavian and Western European countries. Social policies in German-speaking countries – that have adhered to the male breadwinner model until fairly recently – show lower enrolment rates of young children in childcare throughout the period considered (OECD 2013). The between-country variation in childcare enrolment reflects substantial variation between countries in (full-time) labour force participation of women following motherhood (Neels & Theunynck 2012). Using longitudinal contextual data on childcare enrolment between 1990 and 2005 as a proxy for availability of childcare provisions, our analysis show that a higher proportion of young children enrolled in childcare is associated with higher first birth hazards. In general, a 1 per cent increase in childcare enrolment is associated with an increase of first birth hazards by approximately 0.8 per cent. The effect is more articulated, however, among women aged 25-35 years. Although the effect of childcare enrolment on first birth hazards may appear to be small, the observed within-country differences in childcare enrolment over

time as well as the between-country variation in childcare enrolment have to be taken into account. According to our results, a 59.5 per cent difference in childcare enrolment – the difference observed between Denmark and Austria in 2005 (OECD) – corresponds to an increase in first birth hazards ranging from 40.1 to 111.0 per cent among women aged 25-39 years.

In sum, where educational expansion and adverse economic conditions are significantly associated with the so-called postponement transition in North-western and Southern Europe - i.e. the decline of first birth hazards at younger ages - between 1975 and 1995, the between-country variation in first birth hazards after the mid 1990s predominantly reflects differential recuperation after age 30 of births postponed earlier in the life-course. Our results suggest that this variation in the recuperation phase is associated with between-country variation in family policy packages. Comparing the effects of family allowances and first birth hazards on first birth hazards, particularly the reduction of the 'mother-worker'-conflict through the availability of childcare facilities seem relevant in supporting recuperation of fertility.

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Figures & Tables

Table 1 Country-specific descriptives: response rate, number of women included in the analysis, number of person-years and number of first births

Country	*Response rate*	*Number of individuals*	*Number of person-years*	*Number of first births*
Austria	64.0	704	9931	512
Belgium	61.0	426	6520	372
Switzerland	51.5	446	9050	375
Germany	54.5	667	10756	538
Denmark	50.8	323	5515	302
Spain	65.9	491	7524	337
Finland	64.4	411	6945	334
France	46.0	509	8106	434
United Kingdom	54.6	582	9750	500
Ireland	56.8	464	7092	355
Netherlands	59.8	487	9300	402
Norway	65.5	436	6529	362
Portugal	72.8	492	7002	451
Sweden	65.9	468	6910	374
Total	-	6906	110930	5848

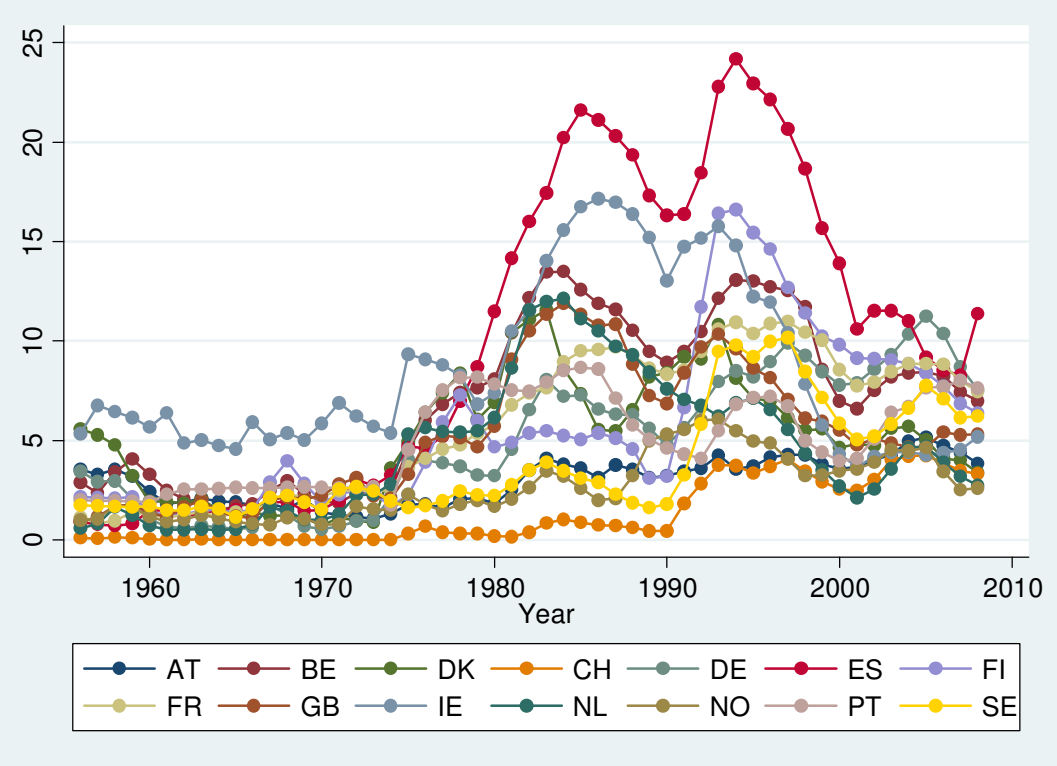
Source: European Social Survey, ESS3 2006 (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom, 1975-2005)

Table 2 First births, person-years and first birth rates by individual level time-constant and time-varying covariates, women aged 15-49, 1975-2005.

	Number of person-years		*Number of*	*First birth*
Covariates	*N*	*%*	*first births*	*rate*
Age-groups				
15-19	34795	.3137	437	.0126
20-24	30685	.2766	1744	.0568
25-29	20272	.1827	2081	.1027
30-34	10454	.0942	1048	.1002
35-39	6148	.0554	283	.0460
40-44	4617	.0416	52	.0113
45-49	3959	.0357	3	.0001
Education				
Lowest quartile	23653	.2132	1483	.0627
Lower medium quartile	29225	.2635	1679	.0575
Higher medium quartile	31119	.2805	1461	.0469
Highest quartile	26933	.2428	1025	.0381
Duration since first employment (in years)				
Never or <5 years	64917	.5852	2006	.0309
5-9 years	20015	.1804	1950	.0974
10-14 years	10852	.0978	1190	.1097
15-19 years	6192	.0558	383	.0619
≥ 20 years	8954	.0807	119	.0133
Duration since first cohabitation (in years)				
Never cohabited	70170	.7017	959	.0137
1-5 years	21388	.2139	3217	.1504
6-10 years	9196	.9196	1104	.1201
11-15 years	4702	.4702	300	.0638
≥ 16 years	5474	.5474	68	.0124

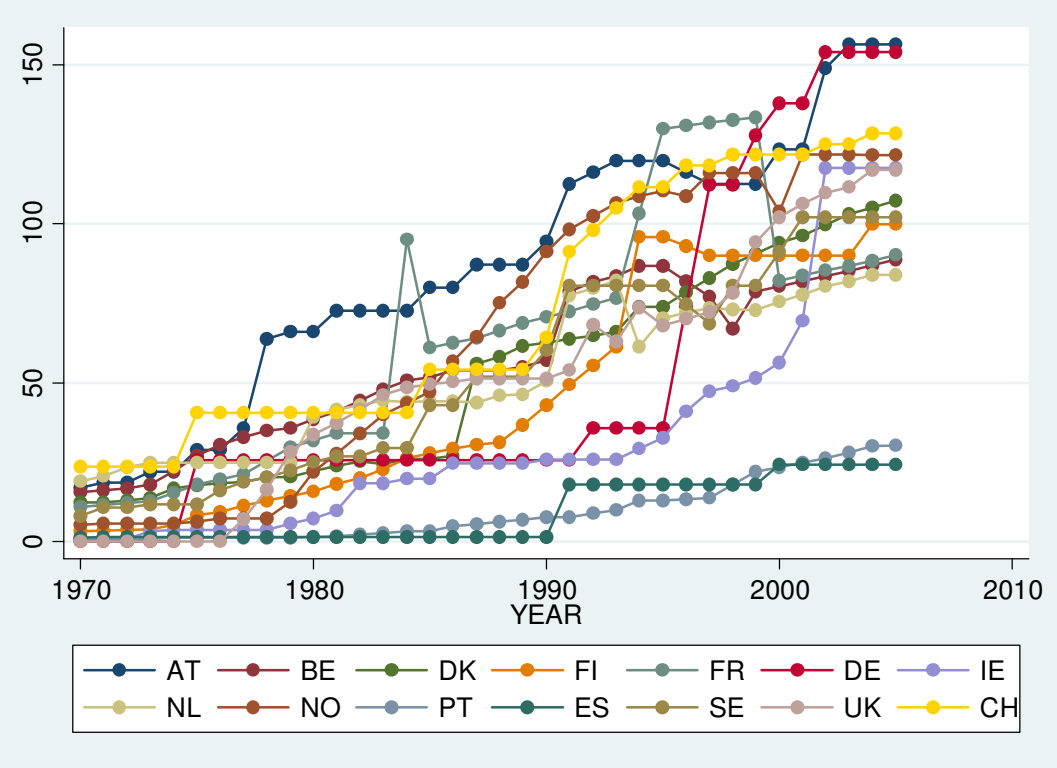
Source: European Social Survey, ESS3 2006 (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom, 1975-2005)

Figure 1 Harmonised unemployment rates in selected Northern European countries, 1960-2008.



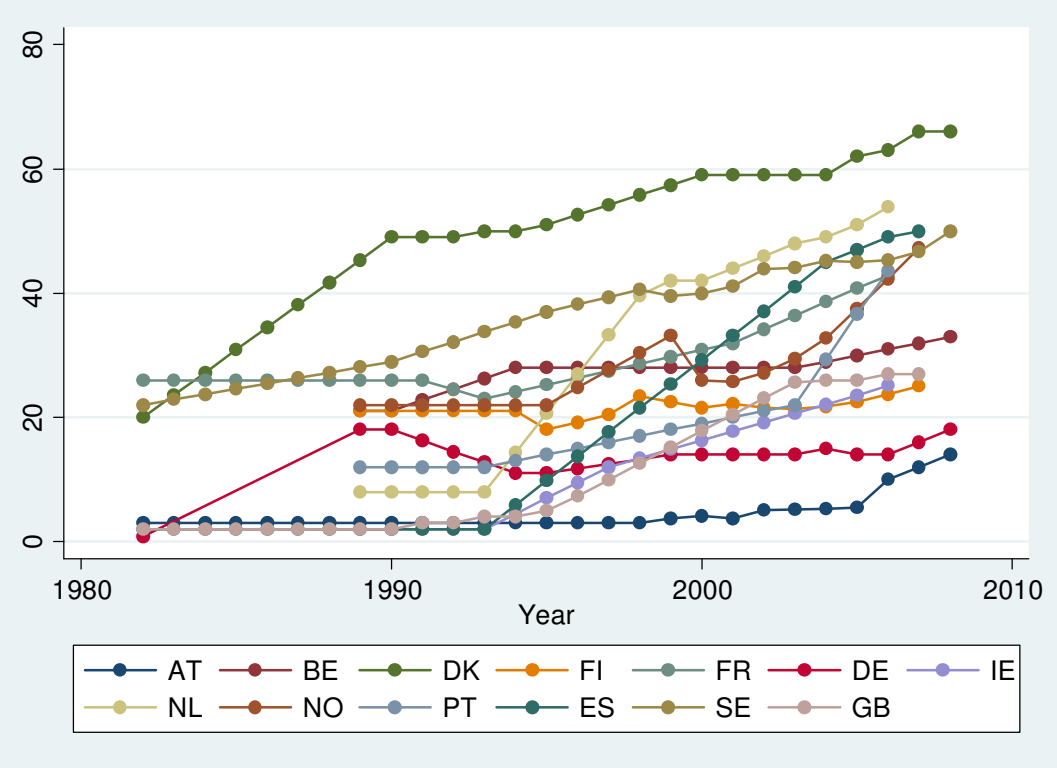
Source: OECD (2010)

Figure 2 Family allowance for first child (in euro) in 14 European countries, 1970-2005



Source: Comparative Family Policy Database (Gauthier 2010)

Figure 3 Childcare enrolment of children aged 0-2 years in 13 European countries, 1990-2005



Source: Luci and Thevenon (2010)

Table 3 Exponentiated coefficients (odds-ratios) from random-effects logit models of first birth, women aged 15-49, EU-14, 1975-2005

	Model 1		*Model 2*		*Model 3*		*Model 4*		*Model 5*		*Model 6*	
	e(b)	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*
						Individual-level covariates						
Baseline hazard function												
cage_linear	1.663	***	1.605	***	1.203	***	1.327	***	1.203	***	1.202	***
cage_quadratic	.972	***	.973	***	.989	***	.978	***	.989	***	.989	***
cage_cubic	1.000	***	1.000	***	1.000	*	1.000	***	1.000	*	1.000	
Baseline*education quartiles												
*cage_linear*edu_q2*	1.150	***	1.138	***	1.106	***	1.111	***	1.105	***	1.105	***
*cage_linear*edu_q3*	1.269	***	1.256	***	1.199	***	1.209	***	1.199	***	1.198	***
*cage_linear*edu_q4*	1.395	***	1.386	***	1.286	***	1.292	***	1.286	***	1.284	***
*cage_quad*edu_q2*	.996	***	.997	***	.997	***	.997	***	.997	***	.997	***
*cage_quad*edu_q3*	.995	***	.995	***	.996	***	.996	***	.996	***	.996	***
*cage_quad*edu_q4*	.994	***	.994	***	.996	***	.995	***	.996	***	.996	***
Education *(lowest quartile q1 is reference)*												
Medium low (q2)	.043	***	.054	***	.100	***	.090	***	.097	***	.100	***
Medium high (q3)	.003	***	.004	***	.011	***	.009	***	.012	***	.011	***
High (q4)	.000	***	.000	***	.001	***	.001	***	.001	***	.001	***
Year												
Year	.991	***	.992	***	.989	***	.989	***	.989	***	.989	***
Duration since first job *(never or <5 years is reference)*												
5-9 years	-		1.293	***	1.034		1.036		1.034		1.027	
10-14 years	-		1.331	***	1.091	*	1.099	*	1.092	*	1.083	
15-19 years	-		1.180	**	.988		.968		.989		.979	
≥20 years	-		1.070		.914		.882		.915		.904	
Duration since first cohabitation *(never cohabited is reference)*												
1-5 years	-		-		8.564	***	8.516	***	8.564	***	8.551	***
6-10 years	-		-		6.631	***	6.652	***	6.634	***	6.626	***
11-15 years	-		-		5.087	***	4.976	***	5.089	***	5.081	***
≥16 years	-		-		3.236	***	3.201	***	3.234	***	3.232	***
						Macro-level covariates						
Unemployment Rate *(lagged 1 year)*												
ur_lag1	.980	***	.980	***	.978	***	-		-		.976	***
Unemployment Rate *(lagged 1 year)***Age**												
*ur_lag1*age1519*	-		-		-		.963	***	-		-	
*ur _lag1*age2024*	-		-		-		.958	***	-		-	
*ur _lag1*age2529*	-		-		-		.971	***	-		-	
*ur _lag1*age3034*	-		-		-		1.014	**	-		-	
*ur _lag1*age3539*	-		-		-		1.026	**	-		-	
*ur _lag1*age4044*	-		-		-		.971		-		-	
*ur _lag1*age4549*	-		-		-		.656	***	-		-	
Unemployment Rate *(lagged 1 year)***Educational level**												
*ur _lag1*eduq1*	-		-		-		-		.978	***	-	
*ur _lag1*eduq2*	-		-		-		-		.985	**	-	
*ur _lag1*eduq3*	-		-		-		-		.971	***	-	
*ur _lag1*eduq4*	-		-		-		-		.975	***	-	
Unemployment Rate *(lagged 1 year)***Ever worked**												
*ur _lag1*everwork*	-		-		-		-		-		1.002	
						Random effects parameters						
N Person-periods	110930		110930		110930		110930		110930		110930	
Var(cons)	.170	**	.166	**	.351	**	.441	**	.347	**	.353	**
Cov(cons,cage_lin)	-.010	**	-.009	**	-.017	**	-.022	**	-.017	**	-.017	**
Var(cage_lin)	.001	**	.001	**	.001	**	.001	**	.001	**	.001	**

Source: European Social Survey (2006, Round 3) & OECD, calculations by authors
Significance levels: NS (-), p < .10 (*), p < .05 (**), p < .01 (***)

Table 4 Exponentiated coefficients (odds-ratios) from random-effects logit models of first birth, women aged 15-49, EU-14, 1990-2005

	Model 7		Model 8		Model 9		Model 10		Model 11		Model 12	
	e(b)	sig.	e(b)	sig.	e(b)	sig.	e(b)	sig.	e(b)	sig.	e(b)	sig.
Individual-level covariates												
Baseline hazard function												
cage_linear	1.550	***	1.502	***	1.118	**	1.210	***	1.118	***	1.113	**
cage_quadratic	.978	***	.978	***	.995	*	.986	***	.995	*	.995	
cage_cubic	1.000	***	1.000	***	.999		1.000		.999		.999	
Baseline*education quartiles												
*cage_lin*edu_q2*	1.146	***	1.134	***	1.117	***	1.123	***	1.116	***	1.117	***
*cage_lin*edu_q3*	1.311	***	1.295	***	1.238	***	1.251	***	1.233	***	1.237	***
*cage_lin*edu_q4*	1.685	***	1.660	***	1.531	***	1.543	***	1.528	***	1.528	***
*cage_qua*edu_q2*	.997	***	.997	**	.997	*	.997	**	.998	*	.997	**
*cage_qua*edu_q3*	.994	***	.995	***	.996	***	.995	***	.996	***	.996	***
*cage_qua*edu_q4*	.989	***	.989	***	.991	***	.991	***	.991	***	.991	***
Education *(lowest quartile q1 is reference)*												
Medium low (q2)	.040	***	.050	***	.072	***	.065	***	.090	***	.071	***
Medium high (q3)	.001	***	.002	***	.004	***	.004	***	.005	***	.004	***
High (q4)	.000	***	.000	***	.000	***	.000	***	.000	***	.000	***
Year												
Year	.992		.994		.992		.994		.992		.992	
Duration since first job *(never or <5 years is reference)*												
5-9 years	-		1.305	***	1.061		1.070		1.061		1.047	
10-14 years	-		1.376	***	1.111		1.121		1.110		1.094	
15-19 years	-		1.239	**	1.020		.997		1.019		1.001	
≥20 years	-		1.192		1.026		1.031		1.028		1.005	
Duration since first cohabitation *(never cohabited is reference)*												
1-5 years	-		-		7.712	***	7.713	***	7.726	***	7.685	***
6-10 years	-		-		6.769	***	6.802	***	6.796	***	6.749	***
11-15 years	-		-		4.825	***	4.746	***	4.839	***	4.809	***
≥16 years	-		-		3.410	***	3.399	***	3.418	***	3.400	***
Macro-level covariates												
Family Allowance *(lagged 1 year)*												
fa1_lag1	1.002	*	1.002	*	1.001		-		-		1.000	
Family Allowance *(lagged 1 year)***Age**												
*fa1_lag1*age1519*	-		-		-		.999		-		-	
*fa1 _lag1*age2024*	-		-		-		.999		-		-	
*fa1_lag1*age2529*	-		-		-		1.000		-		-	
*fa1_lag1*age3034*	-		-		-		1.002	**	-		-	
*fa1_lag1*age3539*	-		-		-		1.003	**	-		-	
*fa1_lag1*age4044*	-		-		-		1.000		-		-	
*fa1_lag1*age4549*	-		-		-		.983		-		-	
Family Allowance *(lagged 1 year)***Educational level**												
*fa1_lag1*eduq1*	-		-		-		-		1.002		-	
*fa1_lag1*eduq2*	-		-		-		-		.999		-	
*fa1_lag1*eduq3*	-		-		-		-		1.002		-	
*fa1_lag1*eduq4*	-		-		-		-		1.001		-	
Family Allowance *(lagged 1 year)***Ever worked**												
*fa1_lag1*everwork*	-		-		-		-		-		1.001	
Random effects parameters												
N Person-periods	54263		54263		54263		54263		54263		54263	
Var(cons)	.268	**	.262	**	.518	**	.439	**	.507	**	.514	**
Cov(cons,cage_lin)	-.015	**	-.015	**	-.027	**	-.022	**	-.026	**	-.026	**
Var(cage_lin)	.001	**	.001	**	.001	**	.001	**	.001	**	.001	**

Source: European Social Survey (2006, Round 3) & OECD, calculations by authors
Significance levels: NS (-), p < .10 (*), p < .05 (**), p < .01 (***)

Table 5 Exponentiated coefficients (odds-ratios) from random-effects logit models of first birth, women aged 15-49, EU-14, 1990-2005

	Model 13		*Model 14*		*Model 15*		*Model 16*		*Model 17*		*Model 18*	
	e(b)	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*	*e(b)*	*sig.*
					Individual-level covariates							
Baseline hazard function												
cage_linear	1.547	***	1.499	***	1.114	**	1.204	***	1.115	**	1.114	**
cage_quadratic	.978	***	.978	***	.995	*	.985	***	.995	*	.995	*
cage_cubic	1.000	***	1.000	***	.999		1.000	**	.999		.999	
Baseline*education quartiles												
*cage_lin*edu_q2*	1.146	***	1.134	***	1.118	***	1.122	***	1.118	***	1.118	***
*cage_lin*edu_q3*	1.308	***	1.292	***	1.236	***	1.243	***	1.240	***	1.236	***
*cage_lin*edu_q4*	1.690	***	1.664	***	1.535	***	1.543	***	1.535	***	1.535	***
*cage_qua*edu_q2*	.997	**	.997	**	.997	*	.997	*	.997	***	.997	*
*cage_qua*edu_q3*	.994	***	.995	***	.996	***	.995	**	.996	***	.996	***
*cage_qua*edu_q4*	.989	***	.989	***	.991	***	.991	**	.991	**	.991	***
Education *(lowest quartile q1 is reference)*												
Medium low (q2)	.040	***	.050	***	.071	***	.066	***	.070	***	.071	***
Medium high (q3)	.001	***	.002	***	.005	***	.004	***	.005	***	.005	***
High (q4)	.000	***	.000	***	.000	***	.000	***	.000	***	.000	***
Year												
Year	.989	**	.990	*	.987	**	.989	*	.987	**	.987	**
Duration since first job *(never or <5 years is reference)*												
5-9 years	-		1.304	***	1.061		1.063		1.063		1.061	
10-14 years	-		1.373	***	1.109		1.125	*	1.108		1.109	
15-19 years	-		1.233	**	1.016		1.024		1.016		1.016	
≥20 years	-		1.173		1.010		.977		1.014		1.011	
Duration since first cohabitation *(never cohabited is reference)*												
1-5 years	-		-		7.700	***	7.729	***	7.699	***	7.700	***
6-10 years	-		-		6.733	***	6.745	***	6.753	***	6.735	***
11-15 years	-		-		4.771	***	4.707	***	4.802	***	4.772	***
≥16 years	-		-		3.356	***	3.332	***	3.382	***	3.356	***
					Macro-level covariates							
Childcare enrolment *(lagged 1 year)*												
cce_lag1	1.008	***			1.007	***	-		-		1.007	**
Childcare enrolment *(lagged 1 year)***Age**												
*cce_lag1*age1519*	-		-		-		.999		-		-	
*cce_lag1*age2024*	-		-		-		.999		-		-	
*cce_lag1*age2529*	-		-		-		1.005	*	-		-	
*cce_lag1*age3034*	-		-		-		1.012	***	-		-	
*cce_lag1*age3539*	-		-		-		1.008	**	-		-	
*cce_lag1*age4044*	-		-		-		.983		-		-	
*cce_lag1*age4549*	-		-		-		.735		-		-	
Childcare enrolment *(lagged 1 year)***Educational level**												
*cce_lag1*eduq1*	-		-		-		-		1.009	**	-	
*cce_lag1*eduq2*	-		-		-		-		1.009	***	-	
*cce_lag1*eduq3*	-		-		-		-		1.003		-	
*cce_lag1*eduq4*	-		-		-		-		1.008	**	-	
Childcare enrolment *(lagged 1 year)***Ever worked**												
*cce_lag1*everwork*	-		-		-		-		-		.999	
					Random effects parameters							
N Person-periods	54293		54263		54263		54263		54263		54263	
Var(cons)	.283	**	.261	**	.558	**	.475	**	.558	**	.558	**
Cov(cons,cage_lin)	-.015	**	-.014	**	-.027	**	-.022	**	-.027	**	-.027	**
Var(cage_lin)	.001	**	.001	**	.001	**	.001	**	.001	**	.001	**

Source: European Social Survey (2006, Round 3) & OECD, calculations by authors
Significance levels: NS (-), p < .10 (*), p < .05 (**), p < .01 (***)