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Couples' transition to parenthood in Finland: A tale of two recessions.

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Abstract: The question of how fluctuations in the business cycles and fertility are linked resurfaced in the aftermath of the Great Recession of 2008-09, when birth rates started declining in many countries. Finland, although affected to a much lesser extent than other regions of Europe, is no exception to this decline. However, previous macro-level research on the much stronger recession in Finland in the 1990s shows that, contrary to other developed countries, the typical pro-cyclical behavior of fertility in relation to the business cycle was absent. The objective of this paper is to test how a typical feature of both recessions at the individual level, labor market uncertainty, is linked to childbearing risk in Finland. In particular, I focus on the transition to first birth and on the explicit period comparison between the 1990s and the 2000s. I use Finnish population registers (1988-2013) and adopt a dyadic couple perspective to assess the association between each partner's employment status and the transition to parenthood. Finally, I investigate how, differently in the two periods, the latter relationship changes depending on aggregate labor market conditions to test whether there was a change over time from counter- to pro-cyclicality of fertility in Finland.

Keywords: parenthood, Finland, economic crisis, employment status, couples

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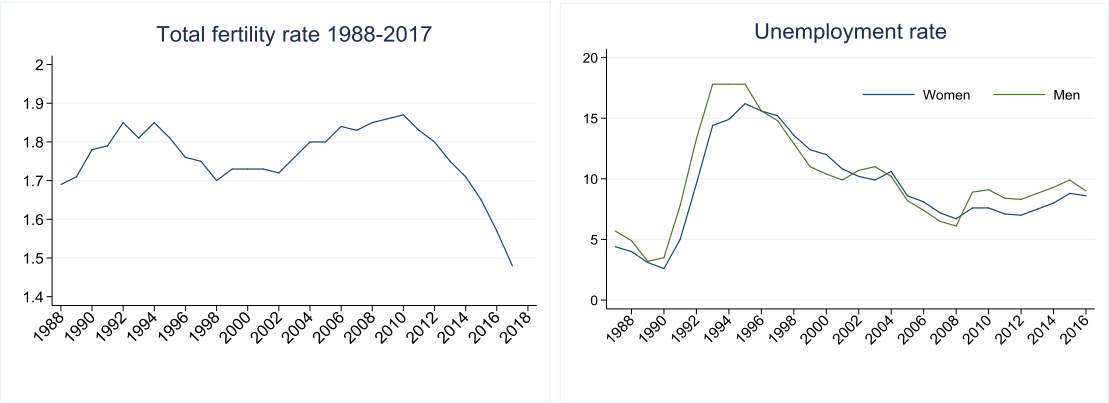
1. Introduction

Scholars' engagement with the issue of whether and how business cycles affect childbearing reflourished in the aftermath of the Great Recession that hit Western countries in 2008-09. The majority of the macro-level studies indicate that fertility rates are pro-cyclical in relation to the economy (Caltabiano et al. 2017; Comolli 2017; Goldstein 2013; Orsal and Goldstein 2018; Schneider 2015; Sobotka et al. 2011). At least in terms of timing, after 2010 the Great Recession was followed by a significant and widespread decline in birth rates in most advanced economies. In the US and a few European countries this decline still persists today, almost a decade after the onset of the Great Recession (Eurostat 2018). Finland and the rest of the Nordic countries, although affected by the recession to a much lower extent than other regions of Europe, are no exception to this ongoing fertility decline. Figure 1 shows the total fertility rate (TFR) in Finland for the period 1988-2017. Since 2010, the TFR declined by 0.4 children per woman. Interestingly, the decline in Finnish birth rates was spread quite evenly across all educational groups and parities. First births declined 22% between 2010 and 2017, and fourth and higher births by 16% (Births 2017, Statistics Finland).

Figure 1: Total fertility rate and unemployment rate in Finland (1988-2017).



Source: Eurostat data (2016) and ILO data (2017).

Fertility in Finland has always been comparatively high (over 1.7 children per woman before 2010) and similar to the other Nordic countries. However, compared to these as well as other European countries, it is quite polarized: 30% of women have three or more children, while one-fifth have no children at all (Miettinen et al. 2015). Currently, 25% of men and 20% of women in Finland are childless at the age of 40 (Miettinen et al. 2015). It seems that once Finnish men and women enter parenthood they have more children than in other contexts but, more so than in other countries, they delay or avoid parenthood altogether. In Finland, it is thus important to focus on the entry into parenthood as a major determinant of complete fertility. Interestingly, while there is still a persistent positive educational gradient in childlessness among men, this gradient has reversed among women. In the 1960s birth

cohorts who ended their reproductive lives just before the onset of the 2008 crisis, childlessness was higher among low-educated women (30%) than among women with a high education (18%). This reversal suggests that the rationale, or the incentives, to postpone childbirth or remain without children might have changed over time. The lack of a spouse explains a large part, but not the entire educational gradient, of childlessness (Javlovaara and Fasang 2017). Voluntary childlessness is still rare in Finland, while the gap between ideals and intentions on the one hand and actual childbearing on the other is one of the largest in Europe: the majority of childless Finns who want to have a child do not manage to do so. In Finland, childlessness appears to be largely the result of a process of postponing childbearing linked to partnership formation and financial or work-related constraints (Miettinen 2010; Javlovaara and Fasang 2017). To my knowledge, no study explicitly addresses the association between labor market uncertainty and childbearing in the aftermath of the Great Recession.

However, Finland was hit by another recession in the early 1990s, and previous research on the fertility response to this crisis offers stimulating and puzzling evidence. The typical pro-cyclical behavior of fertility rates in relation to the business cycle was in fact absent in Finland at the time (Vikat 2004). On the contrary, the peak in TFR in the last decade of the 20th century was registered during the crisis in the early to mid-1990s, and it was only later that fertility slightly and smoothly declined. However, as mentioned, this does not seem to have been the case during the Great Recession, when the TFR declined earlier and more pronouncedly: from 1.87 births per woman in 2010 to 1.4 in 2017 (Eurostat 2017). However, while the decline in births was much greater during the more recent recession, macroeconomic indicators show that the 1990s recession was far worse in terms of both output and labor market losses. For both men and women, for instance, the unemployment rate (Fig. 1) rose 13 percentage points between 1990 and 1995, from around 3% to over 16% (18% for men), while it rose 3 percentage points between 2008 and 2015, going from around 6% to 9% (10% for men) (Statistics Finland and Eurostat 2018). Female unemployment was somehow smoother during the entire period, registering lower peaks during the recession periods but also slower recoveries afterward. Previous findings also highlight that the elasticity of age-specific TFRs to unemployment was zero during the 1990s, while it became negative during the 2000s, suggesting that the Finnish labor market underwent long-term structural changes that affected the fertility response to employment shocks (Comolli 2018). After the 1990s recession, the structural rate of unemployment increased and was thus higher when the Great Recession hit. The share of temporary working contracts rose, and continued representing the majority of newly initiated contracts at least until the mid-2000s (Jonung et al. 2009). The Finnish labor market became more precarious, and remained so until the onset of the most recent wave of economic turmoil.

The present study addresses precisely the relationship between this rising employment insecurity and childbearing. Its first contribution is thus to investigate the effect of the two economic downturns on Finnish couples' entry into parenthood, focusing on their labor market consequences. In particular, the hazard of first birth is modelled through variations in both partners' employment statuses

simultaneously. Adopting a couple dyadic perspective, the study aims to disentangle the impact of employment uncertainty in the form of unemployment, by gender, net of the other partner's position. The study's second contribution is its explicit focus on the period comparison between the 1990s and the 2000s. The objective is to assess whether the change from counter- to pro-cyclicality of fertility in relation to the business cycle highlighted by macro-level research can also be observed when looking at micro-level behavior. In the analyses, I use aggregate unemployment rate as an indicator of business cycles' fluctuations, and investigate whether the association between couples' working status and the risk of childbearing changes depending on aggregate labor market conditions. All analyses are conducted separately for two periods (1988-2000 vs. 2001-2013) to test changes across them in all the associations of interest. Finally, variations across women's educational levels are also investigated in order to shed light on the mechanisms that might explain specific behaviors.

2. Theoretical background

The theoretical foundation of the association between financial and labor market uncertainties and childbearing decisions is based on the two pillar mechanisms of family economics (Becker 1960). Based on the assumption that children are normal consumption goods, the *income effect* predicts that any reduction in a household's income will generate a reduction in the number of children it will ultimately have. As the man is still more likely to be the main provider in the family, the income loss generated by male unemployment is predicted to be more harmful to the household budget and to affect the decision to have a child more negatively than female unemployment. Moreover, as the woman is instead more likely to be the principal caregiver in the household, in the case of childbearing the woman is on parental leave for a much longer time than the man. Despite being able to retain one's job and receive financial compensation, while on parental leave, opportunities for career mobility are foregone, as is accruing experience and job tenure. This indirect cost of childbearing for employed prospective parents, which is much greater for women than men, is called the *opportunity* or *substitution effect*. This runs opposite to the income effect, predicting that jobless individuals will be more likely to have children because they do not face this indirect cost of foregone opportunities.

However, labor market insecurity and unemployment do not only imply monetary costs or financial losses. On the one hand, career instability signals a lower ability to provide for the household and a possible lower commitment that make partners, especially men because of their more frequent role as breadwinner, less attractive in the marriage and childbearing market. This mechanism is called the *uncertainty effect* (Oppenheimer 1994). However, on the other hand, individuals with extremely limited opportunities in the labor market might turn to parenthood and forming a family as an alternative for providing security in an uncertain life. The *uncertainty reduction effect* would predict that especially very low-educated women would become mothers in response to their extremely unstable labor market careers to give their life meaning (Friedman et al. 1994).

While all four mechanisms are predicted to be different across gender, their strength depends

not only on gender as such but also on the partner's characteristics. Childbearing is a couple's decision, and both partners' labor market positions are simultaneously determinant **(**Matysiak and Vignoli 2008; Vignoli et al. 2012). A security or financially compensatory mechanism might be present in case of one partner losing his/her job if the other retains a solid position in the labor market; or social norms regarding the roles of male and female partners in the couple might drive the decision to have children. Partners might opt for a bargaining process based on their relative income or the solidity of their jobs, or for a more traditional (male-breadwinner) or untraditional (female-breadwinner) gender specialization in domestic and labor market work (Blossfeld and Drobnic 2001; Esping-Andersen 2009; Testa et al. 2011). Finally, as the dependence on only one income might make households vulnerable to the sudden loss of that income, women's employment might be perceived as an adaptive strategy in regard to the deterioration of men's economic status that is typical of economic downturns (Oppenheimer 1994, 1997).

3. The economy-fertility nexus in Finland

Most of the recent evidence on the business cycle link to fertility in Finland focuses on aggregate period indicators. One recent paper (Hiilamo 2017) finds a negative elasticity of total delivery rates to unemployment rates for the period 1991-2015 of -0.13%, with a stronger negative response after 2008 compared to the 1990s. Comolli (2018) shows that when the two periods are separated, though, it becomes clearer that at the aggregate level the elasticity of age-specific TFRs to unemployment rate was null in the 1990s (except for teenage first births) but became strongly negative after 2000 for parities 1 and 2. Except for these two studies, most of the existing evidence on childbearing behavior in response to up- and downturns in the economy in Finland, both at the aggregate and the individual level, concerns the crisis of the 1990s. Early macro-level research on the 1990s recession shows that, differently from the other Nordic countries (Andersson 2000), the pro-cyclical behavior of fertility rates in relation to the business cycle was absent in Finland (Vikat 2002, 2004). On the contrary, the peak in fertility of the last decades of the 20th century was registered in the early to mid-1990s, and the TFR declined only later. One problem with the TFR is that it does not reflect parity or age-specific rates (Vikat 2002, 2004). Studies of birth dynamics in Finland in the early 1990s, in fact, show that once fertility rates are differentiated by parity and age, some pro-cyclicality emerges. The positive trend in first births of the late 1980s came to a halt exactly at the onset of the recession in 1991, and reverted to a declining trend thereafter. This decline, however, was concentrated only among women below the age of 30, whereas older women (31-49) still displayed a positive trend in first births. The upward trend in second and third births, instead, turned negative only after 1994 (Vikat 2002: 166). Vikat (2004) further shows that, within the decline in first births to 20-30-year-old women in the early 1990s, the losses were concentrated on employed women (net of education and earned income) and on medium- to high-income women (net of education). The compositional change in the population of Finnish women brought about by the 1990s crisis, with an increasing share of unemployed and low-income women at

the expense of employed and high-income women, did not affect fertility rates much as the propensity to childbearing is highly similar in all groups, or slightly higher in the unemployed/low-income group (Vikat 2004). The specific Finnish cash-for-care family policy, offered in combination with unemployment benefits at the time, might partly explain this. However, to the knowledge of the author there is no empirical test of this[1].

The evidence from individual-level studies is mixed and limited to the 1990s period. A recent paper on job displacement and couples' fertility decisions among private sector employees shows that, in the 1990s in Finland, the probability of any births declines with women's job loss, and with men's job loss when the income losses linked to unemployment are large (Huttunen and Kellokumpu 2016). This is true for both the recession period (1991-93) and the following recovery period (1996-98). The authors suggest that while men's job loss might trigger an income effect mechanism on the postponement of births, the evidence on women's job loss does not support the same mechanism, pointing instead to a career-interruption negative effect on the probability of having a child. At the very least, this suggests that at the individual level there is a link between labor market instability and childbearing behavior in Finland during the 1990s, as also seems to be the case today after the onset of the Great Recession. The cited paper investigates all births without differentiating by parity, but its findings suggest that macro- and micro-level results on the link between the economic and labor market dynamics and fertility differ quite significantly. Another micro-level study (Berninger 2013), investigating the link between women's income and first birth in Finland and Denmark for the period 1996-2001, finds that the probability of having a first child is not significantly affected by women's income in Finland (for similar findings see Vikat 2004; Ronsen 2004 finds, instead, that female's higher wages depress births). In addition, Finnish women who earn significantly more than their spouses have a lower risk of motherhood. The author suggests that the Home Care Allowance (HCA) policy in Finland favored births especially to low-income couples, thus reducing the importance of income in driving the childbearing decision. Moreover, the HCA incentivized a reversion to a more traditional gender division within Finnish couples, increasing the opportunity cost of motherhood so that couples in which women earn more are disincentivized to become mothers because they do not comply with this role model. These women might also fear unemployment and postpone childbearing in order to secure their position in the labor market. However, the paper also finds a positive association between women's employment and first birth risk, attributing this to the effect of the 1990s crisis. Results are nevertheless mixed, and both the recession and the HCA impact are not directly tested in the paper. Finally, a more recent study by Miettinen and Jalovaara (2018) on the period 1988-2009 (thus not

[1] *The Home Care Allowance (HCA) has often been identified in the literature as responsible for the counter-cyclicality of fertility in Finland during the 1990s recession (Sipila and Korpinen 1998; Vikat 2004). The HCA is an allowance given to parents of children under three years old to allow them to stay home and take care of them if they do not want to send them to public childcare. It was introduced just before the onset of the recession (the law was passed in 1985 and the HCA became fully effective in 1990), and until 1993 it was possible to accumulate it with unemployment benefits. However, to my knowledge, whether the HCA has actually been responsible for the lack of negative response of fertility to the economic downturn has not been empirically addressed by any study.*

including the most recent fertility decline) finds that a less secure labor market attachment, measured through short- and long-term unemployment, tends to delay first birth among both men and women. The paper finds a stronger negative effect for men, for the higher educated, and for individuals over age 30. On the contrary, among younger women with low education, unemployment promotes first birth.

In summary, these findings do not offer a complete picture of what impact the two recessions have had on childbearing in a comparative perspective. Moreover, especially concerning the recent period after the onset of the Great Recession, the evidence is limited or nonexistent. The objective of the present study is to extend this literature by investigating whether, and how differently, the two recessions affected fertility behavior at the individual level. In particular, I investigate two main research questions. First, is the association between couples' labor market uncertainties and the risk of first birth different during the two recession periods in Finland? Second, are these differences heterogeneous across educational strata?

4. Data and method

The data used come from a 10% sample from the Finnish population registers (1988-2013), which due to their high quality allow the adoption of a couple perspective to investigate the impact of labor market uncertainties in Finland in a comparative fashion during the two recessions. The analytic sample includes all men and women with their partners (married or cohabiting) born in Finland. The last restriction is necessary in order to have complete information on the individual's employment history. Men are included in the age range 17-60 years, while women are restricted to reproductive age: 14-49 years. In addition, only heterosexual partnerships are included due to the difficult identification of same-sex couples in the co-residence data. The analytic sample is still very large, including 177,368 couples (N=747,112). Table A.1 in the Appendix shows summary statistics.

The dependent variable is the probability of the birth of a first child (conception). The principal explanatory variable represents all possible partners' employment status combinations between employment, unemployment, and inactivity. This comprises nine categories: couples with both partners simultaneously employed (dual earners); men or women single-earners with partner inactive or unemployed (four possible combinations: male breadwinner, female breadwinner, man single-earner with woman unemployed, woman single-earner with man unemployed); dual jobless (both inactive or both unemployed or one partner inactive and the other unemployed); and inactivity, which includes students, conscripts, disabled individuals, and pensioners.

The second principal explanatory variable describes the aggregate contextual conditions couples live in, through the annual state unemployment rate. The two periods (1988-2000 vs. 2001-2013) are analyzed separately. While the unemployment rate variable should capture business cycles' short-term fluctuations, the two periods might still be characterized by different structural economic, welfare-related and labor market conditions. The specific comparison of the two periods should highlight these long-term differences, if they exist. The main focus of the study is on the interaction terms between

partners' employment status and unemployment rates, and the comparison of these interactions across the two periods. Finally, a third interaction is tested, adding the female partner's educational level to examine whether the probability of first birth by employment status and aggregate unemployment differs between women's categories of low, middle and high education.

The control variables are woman's age (and age squared), both partners' education (basic, upper secondary or tertiary), and marital status (cohabiting, married or registered partnership). Due to the high multicollinearity, a control for the time trend (year) could not be included (variance inflator factor >10). The hazard of the conception of a first child is modelled using logistic regression, and observations are censored after the event or at out-migration, death of one of the partners, or the end of the survey. Identical results have been obtained using a linear probability model. However, the baseline probability was quite low in the sample (11%) and out-of-sample predictions affected the estimates; therefore, results from the Logit models are presented. Results are mostly presented graphically through marginal effects.

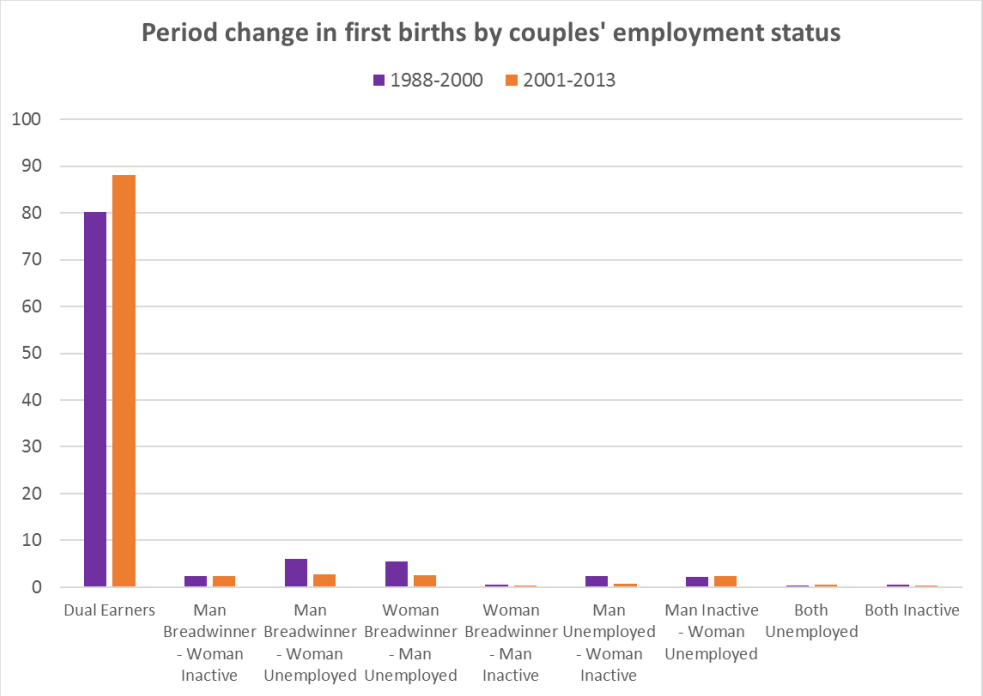
5. Results

Figure 2 illustrates the comparison of the percentage distribution of first births by partners' employment status combination in the two periods. As expected, in both periods the vast majority of first childbirths in Finland take place in dual-earner couples. However, the percentage of first children born to employed parents increased from 80% in the 1990s to 90% during the 2000s. In the more recent period the proportion of first births in couples in which one partner is unemployed, instead, had decreased by more than half. Births to female-breadwinner couples in which the male partner is inactive, and to dual-jobless couples (both unemployed or both inactive) were very few. These descriptive statistics suggest that dual employment is the preferred family model for childbirth in Finland, and that the importance of both partners' employment is growing over time.

The estimates from the logistic model of the hazard of first birth, reported in Table 1, show similar results (for the stepwise models see Tab. A.2 in the Appendix). A graphic summary is provided in Figure 2, plotting the odds ratios from the non-interaction models comparing the 1990s, represented by the blue dots, with the 2000s, represented by the red dots (Models 1, 3 in Tab 1). In both periods, none of the couples' employment combinations display a higher risk of first birth than dual earners (reference category). In the 1990s, couples with one employed and one unemployed partner had risk of childbearing very similar to that of dual earners, with a possibly higher risk for couples in which the woman is unemployed (although only statistically significant at a 90% level). After 2001, all couples show a lower hazard of parenthood compared to dual earners, especially when one or both partners are inactive. Interestingly, the largest change across the two periods in the association between one partner's joblessness and the transition to the first child relative to dual employment is registered for couples in which it is the woman who loses her job. Thus, particularly female unemployment seems to have become more negative for childbearing today than it was in the 1990s.

Net of couples' employment status, aggregate unemployment rates are positively associated with parenthood in the 1990s, confirming the counter-cyclicality of fertility highlighted by macro-evidence. During the 2000s, rising rates of unemployment are on the contrary associated with a (weak) postponement of parenthood. The control variables are in line with previous findings (Miettinen and Jalovaara 2018). Marriage, compared to cohabitation, is still the strongest predictor of parenthood even in the Finnish context; however, its importance seems to be declining over time. Education, for both men and women, is U-shapely correlated to the entry into parenthood. Men and women with a secondary education tend to postpone childbearing compared to both those who are primary and tertiary educated. Tertiary-educated women enter childbirth sooner, even compared to those who are primary educated.

Figure 2: Distribution of first births by couples' employment



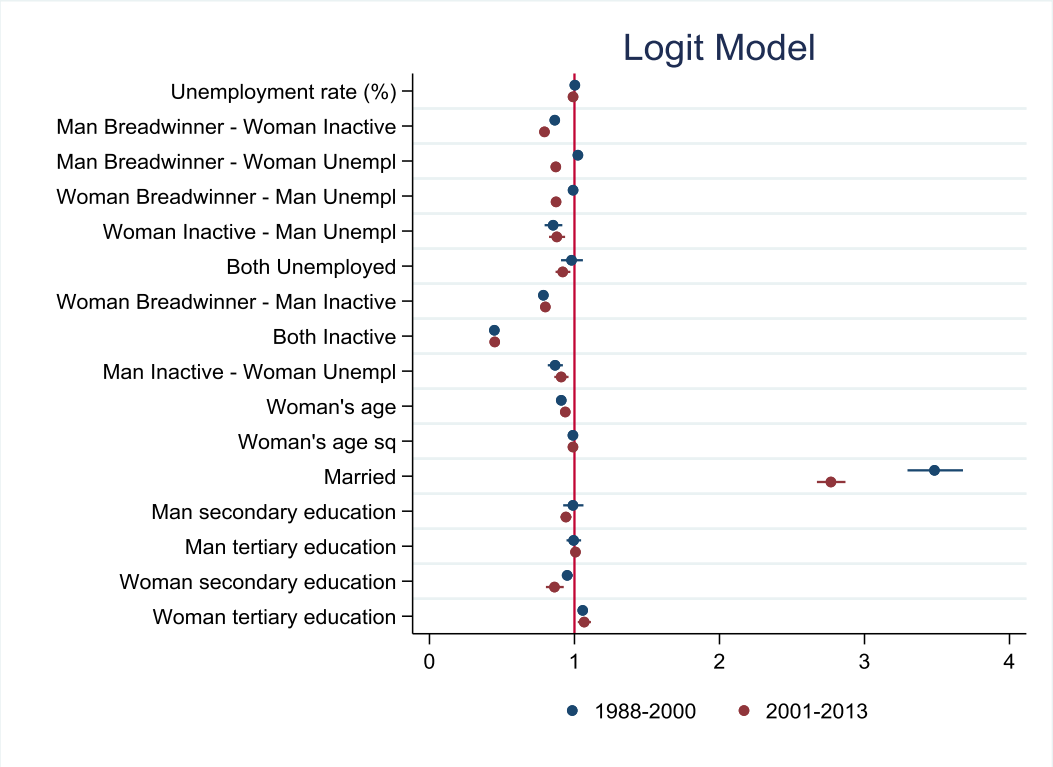
Source: Finnish population registers.
Note: The percentage of first conceptions is below 0.5% for the categories of Both Unemployed and Both Inactive and Woman Breadwinner – Man Inactive.

Table 1: Logistic regression model of the hazard of first birth

	1988-2000		2001-2013	
	Model (1)	Model (2)	Model (3)	Model (4)
Unemployment rate (%, mean centered)	1.003**	1.005***	0.990**	0.985***
	(1.000 - 1.005)	(1.003 - 1.007)	(0.982 - 0.999)	(0.982 - 0.988)
Man Breadwinner - Woman Inactive	0.864***	0.867***	0.793***	0.806***
	(0.840 - 0.890)	(0.842 - 0.892)	(0.771 - 0.816)	(0.789 - 0.822)
Man Breadwinner - Woman Unemployed	1.024*	1.045**	0.871***	0.881***
	(0.996 - 1.052)	(1.005 - 1.086)	(0.858 - 0.884)	(0.862 - 0.900)
Woman Breadwinner - Man Unemployed	0.99	0.991	0.873***	0.957***
	(0.961 - 1.020)	(0.952 - 1.031)	(0.858 - 0.888)	(0.933 - 0.982)
Woman Inactive - Man Unemployed	0.853***	0.985	0.878***	0.784***
	(0.794 - 0.916)	(0.914 - 1.060)	(0.825 - 0.935)	(0.744 - 0.827)
Both Unemployed	0.98	0.937*	0.919***	1.052
	(0.907 - 1.058)	(0.868 - 1.010)	(0.869 - 0.971)	(0.988 - 1.119)
Woman Breadwinner - Man Inactive	0.786***	0.786***	0.799***	0.898***
	(0.766 - 0.806)	(0.767 - 0.806)	(0.777 - 0.822)	(0.876 - 0.921)
Both Inactive	0.448***	0.459***	0.450***	0.417***
	(0.441 - 0.454)	(0.451 - 0.468)	(0.436 - 0.465)	(0.404 - 0.430)
Man Inactive - Woman Unemployed	0.866***	1.079**	0.909***	1.087**
	(0.816 - 0.920)	(1.006 - 1.157)	(0.861 - 0.959)	(1.019 - 1.160)
Man Breadwinner - Woman Inactive*Unemployment rate		0.973***		1.013***
		(0.973 - 0.973)		(1.006 - 1.020)
Man Breadwinner - Woman Unemployed*Unemployment rate		0.992***		1.010**
		(0.992 - 0.992)		(1.001 - 1.019)
Woman Breadwinner - Man Unemployed*Unemployment rate		0.998***		1.094***
		(0.997 - 0.999)		(1.083 - 1.105)
Woman Inactive - Man Unemployed*Unemployment rate		0.953***		0.896***
		(0.951 - 0.955)		(0.888 - 0.904)
Both Unemployed* Unemployment rate		1.008***		1.155***
		(1.004 - 1.012)		(1.143 - 1.166)
Woman Breadwinner - Man Inactive*Unemployment rate		0.975***		1.102***
		(0.974 - 0.975)		(1.099 - 1.106)
Both Inactive*Unemployment rate		0.981***		0.939***
		(0.981 - 0.982)		(0.937 - 0.941)
Man Inactive - Woman Unemployed*Unemployment rate		0.926***		1.188***
		(0.926 - 0.927)		(1.175 - 1.202)
Woman's age	0.909***	0.909***	0.937***	0.937***
	(0.896 - 0.922)	(0.896 - 0.922)	(0.923 - 0.951)	(0.923 - 0.951)
Woman's age squared	0.989***	0.989***	0.990***	0.990***
	(0.988 - 0.991)	(0.988 - 0.991)	(0.988 - 0.991)	(0.988 - 0.991)
Married	3.483***	3.486***	2.769***	2.770***
	(3.297 - 3.679)	(3.305 - 3.678)	(2.672 - 2.869)	(2.677 - 2.867)
Man secondary education	0.989	0.989	0.941***	0.941***
	(0.922 - 1.062)	(0.922 - 1.062)	(0.904 - 0.979)	(0.904 - 0.980)
Man tertiary education	0.994	0.994	1.007	1.007
	(0.945 - 1.045)	(0.945 - 1.045)	(0.981 - 1.033)	(0.981 - 1.033)
Woman secondary education	0.950**	0.951**	0.862***	0.862***
	(0.913 - 0.988)	(0.915 - 0.988)	(0.803 - 0.926)	(0.802 - 0.926)
Woman tertiary education	1.057***	1.057***	1.067***	1.066***
	(1.025 - 1.090)	(1.025 - 1.090)	(1.023 - 1.113)	(1.022 - 1.113)
Constant	0.116***	0.116***	0.140***	0.139***
	(0.111 - 0.121)	(0.111 - 0.121)	(0.133 - 0.147)	(0.134 - 0.144)
N	314812	314812	298098	298098

Source: Finnish population registers.

Figure 3: Coefficient plot of logistic model of first birth by period (non-interaction models)



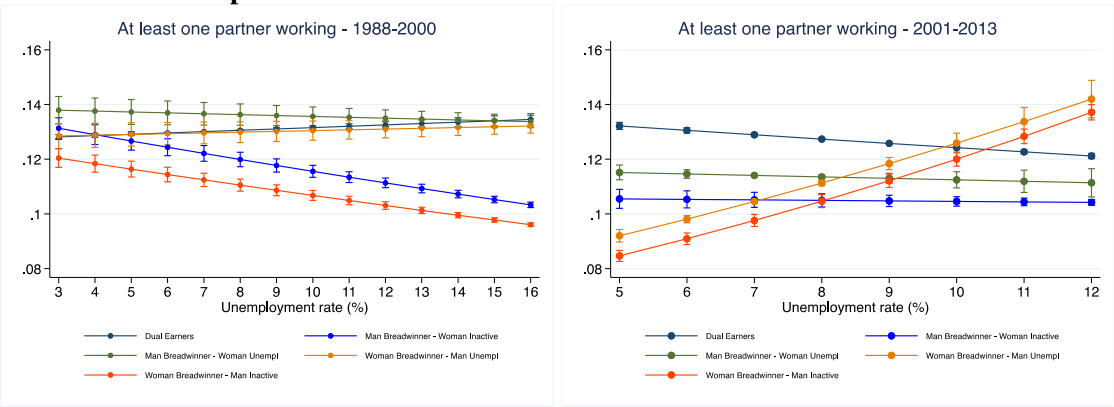
Source: Finnish population registers.

The second research question of the study concerns the role of aggregate unemployment as a moderator of the association between the partner's labor market status and the entry into parenthood. Models 2 and 4 in Tab. 1 display the interaction of interest between aggregate unemployment rate and couples' employment status. Interactions in nonlinear models are better interpreted using margins. Figures 4-5 illustrate the marginal effects of couples' employment status combinations across levels of unemployment. Figure 4 includes the comparison between couples in which at least one partner works. The left graph reports results for the period 1988-2000, and the right panel for the period 2001-2013. In reference to the macro-evidence on the counter-cyclicality of fertility in Finland cited earlier, some typologies of couples do behave counter-cyclically in relation to aggregate unemployment in the 1990s in their individual-level risk of first birth as well. However, this also seems to be true in the more recent period, although the types of couples accelerating the entry into parenthood differs between the two periods. During the 1990s, higher unemployment induced a mild acceleration of the entry into parenthood for dual earners and couples in which the woman is the breadwinner and the man is unemployed. The latter group, together with other female-breadwinner couples in which the man is inactive, display a major acceleration in the risk of first birth with rising unemployment in the more recent period. Male-breadwinner couples (both with inactive and unemployed female partners) instead behave more pro-cyclically, showing a declining risk of first birth with rising unemployment rates in both periods. The strongest pro-cyclicality in the 1990s is found among traditional male-breadwinner

couples (woman inactive) and among dual earners in the 2000s. The strongest counter-cyclicality is instead found among dual earners in the 1990s and among female-breadwinner couples in the 2000s.

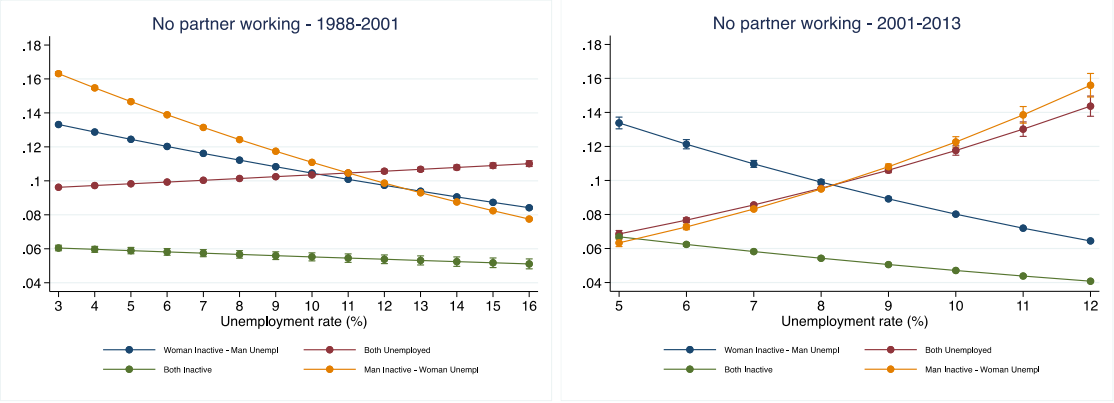
In addition, Figure 5 presents the marginal effects across couples in which neither partner is employed. For these typologies of couples, as shown, births are rarer and fewer; however, for the sake of completeness, results are presented for this group as well. Briefly, the only counter-cyclical behavior in the period 1988-2000 is observed for couples with both partners unemployed. For all other types of couples with non-working partners, the hazard of parenthood declines with rising unemployment rates – again, more steeply for couples in which the female partner is unemployed compared to the male partner. During the period 2001-2013, instead, both couples with dual unemployment as well as those with an inactive male partner and an unemployed female partner display a counter-cyclical rising risk of first birth with increasing unemployment.

Figure 4: Marginal effect of partners' employment status by unemployment rate. Couples in which at least one partner works.



Source: Finnish population registers.

Figure 5: Marginal effect of partners' employment status by unemployment rate. Couples in which neither partner works.



Source: Finnish population registers.

The incentives to behave more pro- or counter-cyclically might depend on women's education. The following analyses across women's educational level shed light on the mechanisms explaining the

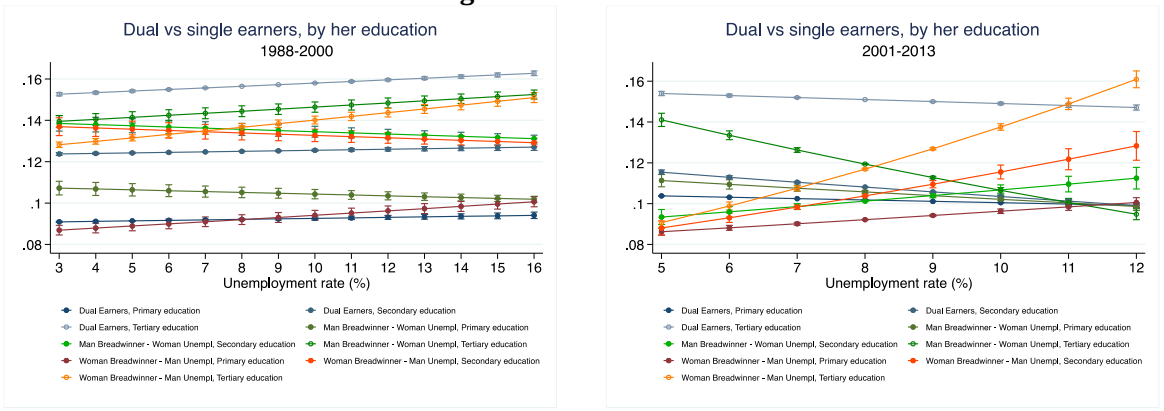
change in counter- to pro-cyclicality of first birth in relation to the business cycle in Finland. Figures 6-7 show the marginal effect of partners' employment status by aggregate unemployment and by women's educational level. For the sake of simplicity, in these analyses by education I focus on the most meaningful comparisons. Figure 6 presents results comparing dual earners to single earners with the non-working partner being unemployed. Dual earners in which the female partner is highly educated have the highest risk of first birth in both periods, but while they behave counter-cyclically in the 1990s they do not behave this way during the 2000s. Similarly, dual earners with a secondary or primary education also postpone first birth in the recent period with rising unemployment while they do not do this in the 1990s. Therefore, besides the levels, there is no educational difference within dual earners across the two periods.

For the period 2001-2013, all female-breadwinner couples with an unemployed male partner display an increasing risk of first birth with rising unemployment, with the steepest increase for the couples with highly educated breadwinners. In this period, the differences by educational groups increased significantly with rising aggregate unemployment, with the couples with primary-educated breadwinner women changing their behavior the least in response to rising unemployment. For the period 1988-2000, both couples with primary- and tertiary-educated breadwinner women also behave counter-cyclically while, on the contrary, couples with secondary-educated breadwinner women with an unemployed male partner postpone their first child in response to increasing rates of unemployment.

Couples in which there is a tertiary-educated unemployed women with a working partner behave counter-cyclically in the 1990s but postpone childbearing with rising unemployment rates in the more recent period, displaying the steepest decline in the risk of childbirth among those included. While couples in which unemployed women are primary-educated postpone first birth in both periods, couples with a secondary-educated unemployed women and a working partner behave contrary to the tertiary-educated: this group postpones childbearing in the 1990s as unemployment increases, while they do not do this today.

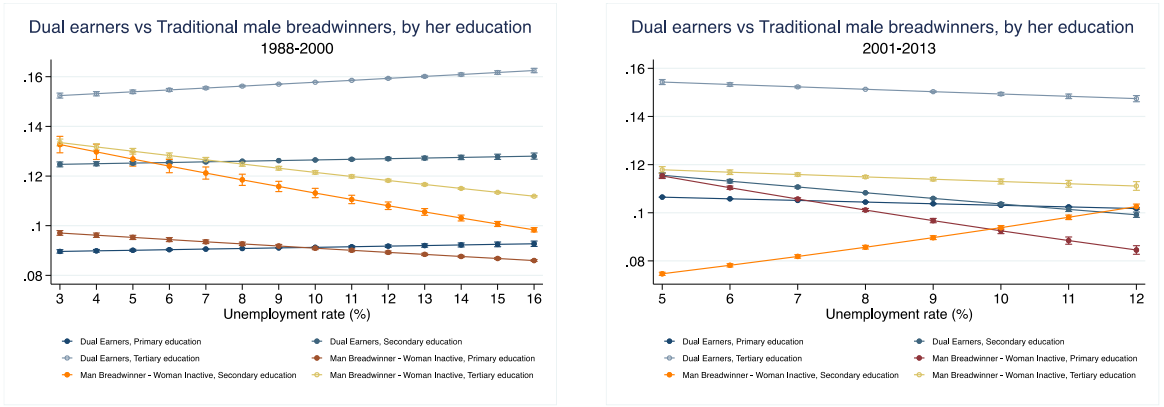
Figure 7 presents the comparison between dual earners, described above, and traditional male-breadwinner couples. Except for traditional male-breadwinner couples in which the inactive female partner has a secondary education, who display an accelerating risk of childbirth with rising unemployment during the more recent period (2001-2013), all other traditional male breadwinners postpone first birth as unemployment increases, in both periods.

Figure 6: Marginal effect of partners' employment status by unemployment rate and women's educational level. Dual earners vs. single earners.



Source: Finnish population registers.

Figure 7: Marginal effect of partners' employment status by unemployment rate and women's educational level. Dual earners vs. traditional male breadwinner.



Source: Finnish population registers.

6. Discussion

This study investigates the relationship between partners' employment status and the transition to first birth in Finland for two time periods: the 1990s and the 2000s. Each period witnessed an economic downturn that profoundly affected the Finnish labor market. Before the onset of the 1991 recession, in the 1980s the small economy of Finland never experienced unemployment rates above 5%, thanks mainly to the corporative bargaining structure of the labor market and its active policies (Kiander and Pehkonen 1999). Since 1991, however, Finland has never managed to bring the unemployment rate back below this threshold. Contrary to the early 1990s crisis, in 2008 the Great Recession hit a weaker economy and a more fragile labor market, taking unemployment back to almost 10%. Family decisions are strongly affected by financial circumstances and the state of the job market. Economic uncertainty has been shown to be a major driver, particularly in childbearing decisions (Adsera 2005, 2011; Blossfeld et al. 2005). The present study informs the literature on the nexus between business cycles' fluctuations and fertility behavior in general and, more specifically, adds to the literature on the pro- vs. counter-cyclicality of fertility in Finland. The latter issue presents puzzling evidence that tends to contrast with evidence from other similar contexts. Contrary to the Nordic countries and other advanced economies, in the 1990s the Finnish fertility rate has been found to be counter-cyclical instead of pro-cyclical in relation to the economy. Previous studies, however, only investigate the issue at the aggregate level using period indicators of fertility, and only focus on the recession of 1991, while no study focuses explicitly on comparing the two periods. Finally, this paper contributes to the debate on the recent decline in fertility rates in Finland, witnessed after 2010. This study shows which typologies of couples, in terms of partners' employment status, postponed childbearing in the last decade and likely contributed to the recent birth rate decline.

The findings of the current study, first, confirm at the individual level what has been found using period measures of fertility rates. Net of couples' employment status, aggregate unemployment rate is positively associated with the transition to parenthood in the 1990s, confirming the counter-cyclicality of fertility decisions in that period. During the 2000s, rising rates of unemployment, instead, are associated with a weak but significant postponement of parenthood. These are the average results across all types of partners' job status. The second main result of the study is that in both periods, Finnish dual-earner couples display the highest hazard of entering parenthood. Moreover, the greatest difference between the two periods concerns couples in which the woman is jobless. Female unemployment is more negatively associated with the transition to the first birth today than it was in the 1990s. The income effect thus seems to be predominant over the opportunity cost mechanism for women, similarly to what is traditionally found for men. With respect to Miettinen and Jalovaara's (2018) finding of a stronger effect of men's unemployment than women's, the current results indicate that, considering the years since 2009, the negative association between female unemployment and first birth becomes stronger and therefore the effect might have become more similar to that of male unemployment. Third, the study investigates whether the relationship between partners' labor market

status and first birth changes depending on the aggregate circumstances of the economy. The main question is whether some couples react differently than others to rising unemployment rates in terms of their risk of parenthood. Adding on to the previous evidence regarding the change from counter- to pro-cyclical fertility (Comolli 2018), confirmed by the results of this paper, I test whether this change between the 1990s and the 2000s is concentrated on certain specific job types of couples. Results show that, indeed, only certain types of couples display an acceleration in the risk of first birth with rising unemployment in the 1990s: dual earners and couples in which the woman is the breadwinner and the man is unemployed. However, the analysis also reveals that some types of couples also behave counter-cyclically in the 2000s: those with a female breadwinner. Male-breadwinner couples (both with inactive and unemployed female partners), instead, behave more pro-cyclically in both periods, showing a declining risk of first birth with rising unemployment rates. Thus, pro- or counter-cyclicality does not seem to be linked to women's labor market attachment but, if anything, to men's. Finally, the analyses by women's educational levels confirm what was highlighted above: the opportunity cost of motherhood declined over time. While it was large enough for tertiary-educated unemployed women to compensate for the income effect in the 1990s, this is not the case today; tertiary-educated women, who suffer the greatest income drop following unemployment, postpone childbearing in response to this, and this was especially the case during the Great Recession when the unemployment rates rose. In addition, there is no evidence that the counter-cyclicality of the 1990s was due to low-income, low-educated women profiting from the accumulation of cash-for-care and unemployment benefits. If anything, the counter-cyclicality seems to be related more to male job status.

The study suffers from a few limitations. First, focusing on couples necessarily prevents one from considering the partnering process in the analyses. This has been found to be strongly linked to childlessness in Finland, and additional research should enlarge the current analysis to include unpartnered men and women. Second, differences between couples are interesting and represent a good starting point for the investigation of the topic. However, cross-sectional estimates suffer from unobserved heterogeneity due to characteristics of partners that simultaneously affect their attachment to the labor market and their decision to have a child. Subsequent versions of this paper should address this problem more carefully. Third, the nexus between employment and parenthood is linked to aging. Previous evidence has shown that young adults are more strongly affected by labor market disruptions, and that job losses more negatively influence their childbearing choices compared to older men and women. Due to the space limitation, separate age-group analyses could not be included, although these are extremely relevant. Finally, a few variables could be added or be better specified in the models. Income is not included in the analyses since the focus of the study is on the total effect of job loss on the transition to parenthood; however, to distinguish between the income and the uncertainty effect, it would be necessary to extend the paper and include income as a covariate in the models. In addition, unemployment rate at the municipality level would likely better reflect local labor market conditions than national unemployment.

Despite these limitations, this study contributes to the existing literature on the relationship between employment conditions, business cycles' fluctuations and fertility behavior in many ways. First, it is the first paper to investigate this topic in the aftermath of the Great Recession in Finland and explicitly compare it to the previous economic downturn of the early 1990s. Second, the study adopts a dyadic couple perspective which, despite its known advantages, is still rare in research concerning fertility choices. The third novelty of the study is its further focus on the interaction between partners' job status and aggregate labor market conditions. This perspective illustrates whether the perception of one's own employment insecurity varies according to contextual circumstances, a timely research question given the recent rising economic uncertainty in advanced economies.

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References

Adsera A. (2005). Vanishing Children: From high Unemployment to Low Fertility in Developed Countries. *American Economic Review Papers and Proceedings*. 95(2):198-193.

Adsera A. (2011). Where Are the Babies? Labor Market Conditions and Fertility in Europe. *European Journal of Population*. 21(1):1-32.

Andersson, G. (2000). The impact of labour-force participation on childbearing behaviour: Pro-cyclical fertility in Sweden during the 1980s and the 1990s. *European Journal of Population/Revue européenne de démographie*, *16*(4), 293-333.

Becker, G.S. (1960). An economic analysis of fertility. In *Demographic and economic change in developed countries* (pp. 209-240). Columbia University Press.

Berninger, I. (2013). Women's income and childbearing in context: First births in Denmark and Finland. *Acta Sociologica*, *56*(2), 97-115.

Blossfeld H.-P., Klijzing E., Mills M., Kurz K. Globalization, uncertainty and youth in society. Oxford: Routledge; 2005.

Blossfeld, H.P., and Drobnic, S. (2001). Theoretical perspectives on couples' careers. *Careers of couples in contemporary societies: from male breadwinner to dual-earner families, Oxford University Press, New York*, 16-50.

Caltabiano, M., Comolli, C.L., and Rosina, A. (2017). The effect of the Great Recession on permanent childlessness in Italy. *Demographic Research*, *37*, 635-668.

Comolli, C.L. (2017). The fertility response to the Great Recession in Europe and the United States: Structural economic conditions and perceived economic uncertainty. *Demographic research*, *36*, 1549-1600.

Comolli, C.L. (2018) Finnish fertility: Pro- or counter-cyclical? *Research on Finnish Society* Vol. 11 (2018), pp. 58-64. [Descriptive findings]

Esping-Andersen, G. (2009). *Incomplete revolution: Adapting welfare states to women's new roles*. Polity.

Friedman, D., Hechter, M., and Kanazawa, S. (1994). A theory of the value of children. *Demography*, *31*(3), 375-401.

Goldstein, J.R., Kreyenfeld, M., Jasilioniene, A. and Orsal, D.K. (2013). Fertility reactions to the 'Great Recession' in Europe: Recent evidence from order-specific data. *Demographic Research*, 29(4): 85-104.

Hiilamo, H. (2017). Fertility Response to Economic Recessions in Finland 1991–2015. *Finnish Yearbook of Population Research*, *52*, 15-28.

Huttunen, K., and Kellokumpu, J. (2016). The effect of job displacement on couples' fertility decisions. *Journal of Labor Economics*, *34*(2), 403-442.

Jalovaara, M., and Fasang, A.E. (2017). From never partnered to serial cohabitors: union trajectories to childlessness. *Demographic Research*, 36 (55): 1703-1720.

Jonung, L., Kiander, J., and Vartia, P. (2009). *The great financial crisis in Finland and Sweden: The dynamics of boom, bust and recovery, 1985-2000*. Edward Elgar Publishing Inc.

Karaman Örsal, D.D., and Goldstein, J.R. (2018). The changing relationship between unemployment and total fertility. *Population studies*, *72*(1), 109-121.

Kiander, J., and Pehkonen, J. (1999). *Finnish unemployment: Observations and conjectures*. Finnish Economic Papers, 12(2).

Matysiak, A. and Vignoli, D. (2008). Fertility and women's employment: A meta-analysis, *European Journal of Population*, 24(4): 363-84.

Miettinen, A. (2010). Voluntary or involuntary childlessness? Socio-demographic factors and childlessness intentions among childless Finnish men and women aged 25-44. *Finnish Yearbook of Population Research*, 5-24.

Miettinen, A. and Jalovaara, M. (2018). *Unemployment delays parenthood but not for all. Life stage and educational differences in the effects of employment uncertainty on first births*. WPSEI 9/2018.

Miettinen, A., Rotkirch, A., Szalma, I., Donno, A., and Tanturri, M.L. (2015). Increasing childlessness in Europe: Time trends and country differences. *Stockholm: Stockholm University (FamiliesAndSocieties Working Paper 33)*.

Oppenheimer, V.K. (1994). Women's rising employment and the future of the family in industrial societies. *Population and development review*, 293-342.

Oppenheimer, V.K. (1997). Women's employment and the gain to marriage: The specialization and trading model. *Annual review of sociology*, *23*(1): 431-453.

Rønsen, M. (2004). Fertility and public policies-Evidence from Norway and Finland. *Demographic research*, *10*, 143-170.

Schneider, D. (2015). The great recession, fertility, and uncertainty: Evidence from the United States. *Journal of Marriage and Family*, *77*(5), 1144-1156.

Sipilä, J., and Korpinen, J. (1998). Cash versus child care services in Finland. *Social Policy and Administration*, *32*(3), 263-277.

Sobotka, T., Skirbekk, V. and Philipov, D. (2011). Economic Recession and Fertility in the Developed World, *Population and Development Review*, 37(2): 267-306.

Testa, M.R., Cavalli, L., and Rosina, A. (2011). Couples' childbearing behaviour in Italy: Which of the partners is leading it?. *Vienna Yearbook of Population Research*, 157-178.

Vignoli, D., Drefahl, S. and De Santis, G. (2012). Whose job instability affects the likelihood of becoming a parent in Italy? A tale of two partners, *Demographic Research*, 12(2): 41-62.

Vikat, A. (2002). Fertility in Finland in the 1980s and 1990s: Analysis of fertility trend by age and parity. *Yearbook of Population Research in Finland*, *38*(2002), 159-178.

Vikat, A. (2004). Women's labor force attachment and childbearing in Finland. *Demographic Research*, *3*, 177-212.

Appendix

Table A.1: Summary statistics.

	Obs	Mean	Std. Dev.	Min	Max
First conception	747112	0.119	0.324	0	1
First conception year	395575	2002.04	6.872	1988	2013
Unemployment rate	747112	9.332	3.522	3.11	16.58
Couple	612910	0.682	1.636	0	8
Female partner's age	747112	29.661	7.796	15	49
Male partner's age	747112	31.622	8.097	16	60
Marital status	747112	0.367	0.482	0	1
Female partner's education	747112	2.252	0.679	1	3
Male partner's education	747112	2.108	0.679	1	3
Period	747112	0.495	0.500	0	1
Year	747112	2000.28	7.298	1988	2014

Source: Finnish population registers.

Table A.2: Logistic regression model of the hazard of first birth by period.

	1988-2000				2001-2013			
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Unemployment rate (%, mean centered)				1.002*				0.988***
				(1.000 - 1.005)				(0.982 - 0.995)
Man Breadwinner - Woman Inactive	0.888***	0.858***	0.865***		0.917***	0.787***	0.793***	
	(0.870 - 0.906)	(0.843 - 0.874)	(0.840 - 0.891)		(0.905 - 0.930)	(0.777 - 0.798)	(0.771 - 0.816)	
Man Breadwinner - Woman Unemployed	0.938***	1.026*	1.033*		0.831***	0.845***	0.870***	
	(0.915 - 0.961)	(0.996 - 1.057)	(0.999 - 1.068)		(0.822 - 0.840)	(0.834 - 0.856)	(0.858 - 0.881)	
Woman Breadwinner - Man Unemployed	0.911***	0.993	0.999		0.857***	0.852***	0.871***	
	(0.886 - 0.937)	(0.961 - 1.025)	(0.964 - 1.036)		(0.845 - 0.869)	(0.840 - 0.865)	(0.858 - 0.885)	
Woman Inactive - Man Unemployed	0.878***	0.853***	0.861***		1.011	0.865***	0.876***	
	(0.831 - 0.928)	(0.808 - 0.900)	(0.797 - 0.931)		(0.976 - 1.047)	(0.833 - 0.897)	(0.824 - 0.932)	
Both Unemployed	0.916**	0.982	0.992		0.928***	0.897***	0.917***	
	(0.855 - 0.981)	(0.915 - 1.053)	(0.911 - 1.080)		(0.895 - 0.963)	(0.864 - 0.932)	(0.869 - 0.967)	
Woman Breadwinner - Man Inactive	0.840***	0.779***	0.786***		0.962***	0.794***	0.799***	
	(0.824 - 0.856)	(0.768 - 0.791)	(0.766 - 0.807)		(0.948 - 0.976)	(0.785 - 0.804)	(0.777 - 0.822)	
Both Inactive	0.562***	0.445***	0.450***		0.569***	0.450***	0.450***	
	(0.553 - 0.571)	(0.437 - 0.453)	(0.442 - 0.457)		(0.564 - 0.573)	(0.447 - 0.454)	(0.435 - 0.465)	
Man Inactive - Woman Unemployed	0.941**	0.864***	0.875***		1.112***	0.895***	0.907***	
	(0.896 - 0.988)	(0.826 - 0.904)	(0.818 - 0.935)		(1.078 - 1.148)	(0.869 - 0.922)	(0.860 - 0.957)	
Woman's age	0.939***	0.910***	0.909***	0.909***	0.970***	0.942***	0.937***	0.936***
	(0.924 - 0.955)	(0.898 - 0.923)	(0.896 - 0.922)	(0.896 - 0.922)	(0.953 - 0.988)	(0.928 - 0.957)	(0.923 - 0.951)	(0.922 - 0.951)
Woman's age squared	0.988***	0.989***	0.989***	0.989***	0.987***	0.989***	0.990***	0.989***
	(0.986 - 0.990)	(0.987 - 0.991)	(0.988 - 0.991)	(0.988 - 0.991)	(0.986 - 0.989)	(0.987 - 0.991)	(0.988 - 0.991)	(0.988 - 0.991)
Married		3.504***	3.479***	3.456***		2.826***	2.770***	2.737***
		(3.322 - 3.696)	(3.297 - 3.671)	(3.235 - 3.693)		(2.742 - 2.912)	(2.673 - 2.871)	(2.597 - 2.884)
Man secondary education			0.99	1.004			0.941***	0.970**
			(0.922 - 1.064)	(0.952 - 1.059)			(0.904 - 0.980)	(0.943 - 0.998)
Man tertiary education			0.995	1.009			1.007	1.041*
			(0.945 - 1.048)	(0.977 - 1.042)			(0.981 - 1.034)	(0.994 - 1.091)
Woman secondary education			0.951**	0.975*			0.862***	0.920***
			(0.913 - 0.991)	(0.947 - 1.003)			(0.803 - 0.926)	(0.874 - 0.967)
Woman tertiary education			1.060***	1.090***			1.067***	1.149***
			(1.026 - 1.095)	(1.039 - 1.143)			(1.023 - 1.113)	(1.066 - 1.240)
Constant	0.225***	0.116***	0.116***	0.111***	0.229***	0.137***	0.141***	0.125***
	(0.206 - 0.245)	(0.111 - 0.122)	(0.111 - 0.121)	(0.103 - 0.119)	(0.213 - 0.245)	(0.130 - 0.144)	(0.136 - 0.147)	(0.108 - 0.144)
N	314812	314812	314812	314812	298098	298098	298098	298098

Source: Finnish population register

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