

The impact of the *Great Recession* on fertility in Europe: A multi-level study

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SHORT ABSTRACT

The global economic recession that started in autumn 2007 in the United States has hit almost all European countries, with many experiencing plummeting GDP and rising unemployment for most of the period of 2008-2012. In line with the past research, the worsening economic conditions and increasing economic uncertainty have been expected to affect fertility. Indeed, aggregate-level studies showed that fertility rates, which were increasing until around 2008 started to decline in most European countries after 2009. Nevertheless, up to now there have been no empirical micro-level studies that assess the effects of the *Great Recession* on fertility in Europe. This paper aims to address this research gap. In particular, we assess the impact of the aggregate adverse economic conditions caused by the recent economic recession on individual fertility behaviour in the EU member states, Norway, Switzerland and Iceland. We also investigate how the effects of the recession differ by education level and whether the recession has led to widening socio-economic differentials in fertility. We use the EU-SILC survey which allows us to reconstruct birth histories of over 100,000 women in reproductive age with children still living in the household. Our main explanatory variables are country- and region-level indicators of economic uncertainty and employment instability which are merged with the individual level files. Multi-level event history models are estimated separately for childless women and mothers. We expect that the recession has discouraged childbearing, and that it has particularly affected first births. We also anticipate that highly-educated women have limited their childbearing more than the women with lower education during uncertain times.

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EXTENDED ABSTRACT

Introduction

The global economic recession that started in autumn 2007 in the United States has hit almost all European countries, with many experiencing plummeting GDP and rising unemployment for most of the period of 2008-2012. A review of past research showed that economic recessions frequently lead to fertility declines and stimulate fertility postponement (Sobotka et al. 2011). Especially rising unemployment rates are associated with fertility declines that often take place with a time lag of one to two years. Most of the evidence on fertility changes in Europe after 2008 are in line with the past findings and indicate fertility declines, especially among young women below age 25 (Sobotka et al. 2011; Goldstein et al. 2013; Lanzieri 2013; Sobotka 2013). The increase in the period TFR that started around the turn of the century has peaked in 2008-10; thereafter fertility rates declined in most European countries with the exception of some countries of Eastern Europe, especially Belarus, Russia and Ukraine. In these countries fertility rates increased between 2010 and 2012, partly stimulated by pronatalist programmes. An average TFR for 37 European countries shows the period TFR stabilised at 1.58-1.59 in 2008-2010 and subsequently declined to 1.55 in 2011; 26 countries experienced a decline by 0.02 or stronger in 2011. The reversal in previous increase in period fertility has been more pronounced in countries and regions that experienced stronger economic downturns and faster increases in unemployment (Lanzieri 2013).

From the theoretical point of view both aggregate and individual level conditions influence fertility (Kravdal 2002). The former influence future outlook and expectations of individuals by sending signals about positive or negative economic trends, which in turn affect fertility decision-making. For instance, women living in a country or region suffering from rising economic uncertainty may decide to put off parenthood until better times even if their current employment situation is stable, as they reckon they could be negatively affected in the future. Social interaction in the form of observing others coping with unstable employment or revising their fertility plans may foster a negative momentum, stimulating additional declines in fertility. Consistently, empirical studies indeed found that aggregate level unemployment depresses fertility (Simó Noguera et al. 2005, Berkowitz King 2005, Aaberge et al. 2005: 150, Adsera 2005, 2011, Neels et al. 2012). Individual situation in the labor market also affects the feeling of security and ability to maintain the family. Nevertheless, much of the previous research that referred to individual measures of uncertainty to study its effects on fertility failed to reach consistent findings (see Kreyenfeld et al. 2012 for a review).

Fertility reactions to unstable economic conditions differ by parity, sex, employment and socio-economic status (de Cooman et al. 1987, Schmitt 2008; Adsera 2005; Vignoli et al. 2012). Usually, childless women and men limit their fertility more than those with children,

“postponing” family formation until better times (Neels et al. 2013). Socio-economic status may matter as well, however, the direction of its influence is not clear. Having a child in times of economic recession may impose particularly high opportunity costs on highly educated women and they may react by postponing childbearing in contrast to low educated women who do not have much to lose on the labour market by temporarily withdrawing from the economic activity. On the other hand, highly educated have higher economic resources, more stable situation in the labour market and are more able to deal with difficult situations, thus having a child during the time of the economic recession may turn out to bear less risk on them than on the low educated. In fact, empirical research produced contradictory findings as regards the effects of economic uncertainty on fertility by education. While Kreyenfeld (2010) indeed shows that less educated women are more likely to give birth in response to unemployment, the study by Ozcan et al (2010) for the same country provides contradictory findings and Pailhe and Solaz (2012) find no clear pattern in the effects of unemployment on fertility by education for France. Among men, long-term unemployment was shown to strongly depress first birth rates (Adsera 2011), and unemployment and unstable employment usually fall fastest among the men with low socio-economic status. Family and social policies can, however, mitigate or further strengthen the influence of economic uncertainty on fertility decisions among different socio-economic groups and may, under specific circumstances, even encourage childbearing in uncertain times (Vikat 2004; Sobotka et al. 2011).

Although there has been much research on the effects of economic uncertainty, unemployment and instable employment on fertility many studies are problematic from the methodological point of view. These are studies which investigate the impact of individual-level characteristics (such as individual unemployment or temporary employment) on fertility and in which researchers usually fail to control for unobserved individual characteristics which affect fertility and labour market outcomes in parallel. Such a failure leads to a selection bias to the estimated effects. As the selection problems are less likely to occur in studies which investigate the effects of aggregate-level indicators of economic uncertainty the latter approach may prove more reliable.

Furthermore, previous research on the effects of economic uncertainty on fertility refers mainly to the times when the economic conditions were relatively stable. There have been many fewer studies on the effects of the recent recession on fertility. This is the case particularly for Europe due to lack of comparable panel surveys or large-scale cross-sectional surveys that would include many European countries, cover sufficient sample size, and contain questions on both birth histories and education, partnership, and employment trajectories. This contrasts with the situation in the United States, where a wider range of suitable surveys exist and research is underway to study wide-ranging effect of the *Great Recession* on families. For these reasons the research on the effects of the aggregate level conditions during the recent recession on fertility in Europe has been mainly restricted to macro-level descriptive studies (Lanzieri 2013, Goldstein et al. 2013, Sobotka 2013).

This paper aims to partly address the research gap on the fertility impact of the *Great Recession* on childbearing in countries of the European Union and, at the same time, to eliminate the selection problems that bias much of the previous research on the impact of economic uncertainty on fertility. In particular, we assess the impact of the aggregate adverse economic conditions caused by the recent economic recession on individual fertility behaviour. We also investigate how the effects differ by education level of individuals. In particular, we verify whether the recession widened the socio-economic differentials in fertility.

Analytical strategy and expected findings

We use the data of the EU-SILC Survey (*EU Statistics on Income and Living Conditions*) that currently covers all the 28 EU member states as well as Turkey, Norway, Switzerland and Iceland. The analysis covers the period up until December of 2011, which allows us to study birth reactions to the recession in the first three years when the recession could have affected childbearing, i.e., 2009-2011. From these data we can recover data on birth histories of over 100,000 women in reproductive age living in all EU member states, Norway, Switzerland and Iceland with children still living in the household, their age and completed level of education (including the year of finishing education). In addition, the use of survey data limits problems caused by revising estimations of population size and age structure in many countries of Central and Eastern Europe, following the 2011 Population Census, which resulted in considerable revisions and breaks in the estimated series of fertility rates in these countries. The EU-SILC data have been increasingly used in demographic analyses (Vignoli et al. 2012, Klesment and Puur 2013).

Using these data we estimate multi-level event history models separately for childless women (who are followed since the age 15 to first conception or the survey date) and mothers (followed since the birth of their previous child up to the time of next-birth conception or the survey date). We treat individuals as nested in regions and regions in countries. We conceptualise the role of the economic recession as an aggregate phenomenon affecting lives and fertility decisions of individual women.

The aggregate indicators of economic recession are our main explanatory variables. We rely on indicators of consumer confidence and employment instability (especially as reflected by changes in unemployment rate) as they better reflect the impact of economic uncertainty on individual situation than GDP trends (Sobotka et al. 2011). This approach allows us estimating causal effects of economic uncertainty on fertility which is usually not the case when using information on individual labour market or financial situation due to selection problems. Finally, individual fertility reactions to adverse economic circumstances are often differentiated by socio-economic status (Sobotka et al. 2011). Therefore, we interact aggregate indicators of the recession with educational attainment of individuals. This allows us to verify whether contextual influences of unstable economic circumstances act differently along different social groups.

We expect that the recession has discouraged childbearing, above all and that it has particularly affected first births. We also anticipate that highly-educated women have limited their childbearing more than the women with lower education.

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