Economics and the Timing of First Birth after the Financial Crisis

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The Nordic welfare states are well-known for their active family and labor market policy giving support to couples combining dual-earner careers with family life. The comparatively high and stable fertility rate in these countries is often seen as a positive result of various policy measures related to families and the labour market (Luci-Greulich and Thévenon 2013). In 2009, TFR in Norway was 1.98 children per women, but since then there has been a yearly drop of the fertility level and with 1.73 in 2015 the TFR reached the lowest level in more than 30 years. One of the main reasons for this drop was a change in the timing of first birth (Dommermuth and Lappegård 2016). In the Norwegian context the recent changes with lower fertility levels and increased postponement in the transition to motherhood is somewhat puzzling. Many countries have experiences somewhat similar trends but the global financial crisis in 2007/08 only lead to a slight increase in unemployment rates in Norway and the country was recognized for a robust economy also in the years after the financial crisis.

It is well known that women's labor market participation, education and economic resources are important features for explaining variations in women's timing of first birth (Adserà 2004; Balbo, Billari and Mills 2013; Hart 2015; Kravdal 1994; Kravdal and Rindfuss 2008. Whether and how the importance of these factors is changing over time is less noticed and documented. In this paper we are especially interested in whether the relationship between economic factors and timing of first birth has changed after the global financial crisis. For this analysis we make use of administrative register data for the period 2000-2015 providing us with information about all women in childbearing ages during this period in Norway. We use event history models and estimate the risk of having a first birth, based on longitudinal data with continuous information on education, economic activity, labor market experience and income potential as well as macro-economic indicators on regional level.

Background

Women's education has been identified as one of the most important determinants of the timing of first births (Kravdal and Rindfuss 2008; Lappegård et al. 2013; Rendall et al. 2010). Many women postpone the transition to motherhood till after they have graduated and are established in the labor market. The fact that mean age at first birth for women today are extensively higher than a generation ago is often explain with the revolution of higher education especially among young women. Many countries nowadays experience higher proportions of young women with higher degrees than among young men. In order to understand changes in the timing of first birth, the development of educational attainment is a key determinant. Recent analyses suggest that the decline in the TFR are not only a result of more women having higher educational attainment, as there has been a general postponement of first birth, also among women with lower educational attainment (Dommermuth and Lappegård 2016). This indicates the importance of other factors shaping the age at first birth and calls for closer investigation of the relationship between economic factors and the timing of first birth.

The influence of economic activity

Previous research suggest that women's timing of first birth is indeed influenced by economic activity, i.e. women enrolled in education having lower first birth rate than women not enrolled in education, women unemployed having lower first birth rate than employed women and women neither enrolled in education nor unemployment having lower first birth rate than employed women (Hart 2015; Jalovaara and Miettinen 2013; Kornstad and Rønsen 2014). A key question in our paper is whether being employed has become more important as a determinant for the timing of first birth after the financial crisis. Paid parental leave in the year after the childbirth is the most important family policy directed directly towards parents of a newborn child in Norway. However, access to this policy requires a significant time participating in the labor market prior to birth. As a result of this regulation, the majority of all first-time mothers have been employed prior to birth.

Although unemployment rates have not been very high during the financial crisis in Norway there has been some increase which mean it for many there might became more difficult to get a new job or to get established in the labor market. This may have resulted in stronger distinctions in fertility behavior between those being established in the labor market and those not having a job. If this is the case, we could expect that the positive association between employment and timing of first birth is stronger in the period after the financial crisis than in the period before.

The influence of work experience

Together, educational attainment and economic activity shape how much work experience a woman has in her childbearing years. Women having obtained a higher degree will on average have spent less time in the labor market than women having a lower degree at a given age. There is not only a direct link between work experience and reducing costs of having a child, as access to parental benefits in Norway is conditional on work experience prior to child birth. Further, it can be assumed that women are more settled in their job the more work experience they have accumulated. This can be of importance when returning to work after parental leave. It may be that due to the economic crisis young women perceive it as more important to accumulate a certain work experience before they risk an interruption of their labor market career, and therefore postpone motherhood. If this is the case we would expect work experience to become a stronger determinant for the timing of first birth in the period after the financial crisis than in the period before.

The influence of economic potential

Income is seen as an important determinant on women's fertility and a recent Norwegian study suggest a positive correlation between earnings and first birth (Hart 2015). This finds support in the New Home Economic theory which predicts that individuals with higher earnings are more likely to have children (Becker 1991) and theories of fertility timing which predicts that individuals prefer to have children at a time when their earnings are higher (Happel, Hill and Low 1984). Regarding the Norwegian case, Hart (2015) suggest that the positive correlation not solely is an effect of income but also reflects preferences for ordering of life course transitions. That is, in Norway the dual-earner – dual-career model is dominating and having a solid foothold in the labor market before entering motherhood may be considered to ease the subsequent combination of both parents' career development and childbearing. If this is the case we could expect an increasing positive association between income and first birth in the period after the financial crisis than in the period before.

It may also be that it is not only the income level per se that is important for timing of first birth but also the expected earning profile. For instance, a steep wage profile where wage and work experience is strongly correlated may lead to late first births. If this is the case we could expect income potential to become a stronger determinant for the timing of first birth in the period after the financial crisis than in the period before.

The influence of macro-economic conditions

Beside women's individual economic situation, also macro-economic conditions may play a crucial role for timing of first birth. Previous results from Norway in the 1990s indicate lower higher-order birth rates in municipalities with higher unemployment rates (Kravdal 2002). There is good reasons to believe that timing of first birth also are influenced by unemployment rates. If unemployment rates are high individuals might be more uncertain about future even though they are employed. Also, if unemployment rates are high this may influence the mobility on the labor market and it might take longer time to get a good foothold in the labor market.

Here we are especially interested in whether there is an interaction between regional unemployment rates and individual economic indicators, i.e. whether the importance of economic activity, work experience and income potential differs depending on the regional level of unemployment.

Data and methods

The analyses are based on administrative register data for the whole population in Norway for the period 2000-2015. For part of the analysis we will limit the time-period to 2006-2015 in order to include information about union status. From the administrative registers we only have information about cohabitation since 2006. Union status is an important determinant for women's fertility and as the majority of all first births in Norway occur among cohabiting couples information about cohabitation is a necessity.

We will use an event history model where we estimate how different explanatory variables influence first birth rates or the probability for a woman to have her first child. Our sample contains women aged 19 years or older as there are extremely few births happening before this age.

All variables in our models are time dependent. *Educational level* refers to women's highest completed education and is grouped into four categories; compulsory, high school, low university (BA. etc.), and high university (MA., PhD etc.). *Economic activity* is divided in four categories; (i) employed (and not in education); (ii) in education (but can also be employed); (iii) unemployed; (iv) neither employed, in education or unemployed. *Work experience* is cumulated from age 19. Work experience, economic activity and educational attainment are correlated but as it is quite common to attain work while being a student and some high school graduates first work for some time before they start higher education there will be variation in how much work experience individuals have accumulated at a given age. However, as we are also interested in whether there has been a shift in how much time women spend in the labor market after they have completed their education and before they have their first child we will also create a variable that accumulates work experience since graduation of highest achieved education. As accumulated work experience is very much dependent on time spent in education we will run the models separate by level of educational attainment. *Income* refers to earned income and is measured yearly and income profile refers to individual changes in income. *Unemployment level* refers to unemployment rates in women's economic/labor region. We will make use of different measures such as total unemployment

rates and among women in childbearing ages. *Union status* is divided between single, cohabiting or married. We also control for birth cohort, time period and whether or not they have moved during the last year. We are using women's age as our baseline.

The proposed analysis is going to provide new insights into the mechanisms behind the drop in fertility level that occurred after the global financial crisis within a country that was only modestly affected by the crisis and with generous family policy arrangements. If we do find that the relationship between economic factors and timing of first birth has changed after the global financial crisis one interpretation would be that women's fertility are more sensitive to economic factors and economic conditions which cannot be compensated by generous welfare policies.

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