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First birth losses and gains under economic uncertainty in Italy

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Abstract

Despite the fact that a negative link between economic uncertainty and fertility is customarily suggested, empirical evidence on the economic uncertainty/fertility nexus remains inconclusive. A reason for this inconclusive evidence is that most of previous research has focused on the role of unemployment as a marker of economic uncertainty, whereas other factors, such as precarious work contracts, have been seldom considered. Using retrospective data from the 2009 Italian Multipurpose Household Survey on Family and Social Subjects, this paper aims to investigate whether and how having temporary versus permanent work contracts affects the individual propensity to have the first child in Italy. To this end, we adopt the potential outcome approach to causal inference, aiming to disentangle inter-individual differences in the propensity to have the first child, and to quantify the overall net effect of work uncertainty on first birth losses or gains.

Keywords: Economic uncertainty; Fertility; Propensity score matching; Italy

Introduction

Economic uncertainty is one of the crucial aspects of the globalizing world, and the relationship between economic conditions and family dynamics is now a major topic of public interest. According to the work by Kohler and colleagues (2002), which pioneered the literature on economic uncertainty and low fertility in Europe, couples in lowest-low fertility countries have limited their childbearing due to the economic uncertainty caused by economic turbulence. In contemporary Europe, such conditions of uncertainty are now viewed as primary forces behind the postponement of childbearing, which could also lead to the delay of first births, and elimination of higher-parity births (Kreyenfeld, Andersson and Pailhé 2012; Philipov 2002).

Overall, empirical evidence on the economic uncertainty/fertility nexus remains inconclusive. An increasing body of research has recently addressed the topic (Kreyenfeld, Andersson and Pailhé 2012; Vignoli, Drefahl and De Santis 2012; Vignoli, Rinesi and Mussino 2013), but despite the prevailing conviction that economic uncertainty discourages people from having children, empirical evidence is mixed (see Kreyenfeld, Andersson and Pailhé 2012; Sobotka, Skirbekk and Philipov 2011). A strand of studies has illustrated that youth unemployment, fixed-term work contracts, and unstable employment situations induce a postponement of childbearing (Adsera 2004; Kreyenfeld and Andersson 2014; Ozcan, Mayer and Luedicke 2010; Pailhé and Solaz 2012; Barbieri et al. 2015). Another strand of studies offers different results. Edin and Kefalas (2005) show that the poorest women in non-permanent employment might decide to have a child before marriage because entry into motherhood might increase their social status and make the future safer, as well as a recent finding by Kreyenfeld (2010) illustrates that among poorly educated women living in Germany economic uncertainty accelerated childbearing.

The sources of these heterogeneous findings are various. Some studies ignore that unemployment has different meaning and significance depending on the life-course stage and the socio-economic position a person holds; others still rely on small samples (Kreyenfeld and Andersson 2014). What is more, most of previous research has focused on the role of unemployment as an indicator of economic uncertainty, while other factors, such as precarious work contracts, have been ignored or downplayed (e.g., Kurz, Steinhage and Golsch 2005; Liefbroer 2005; Noguera, Castro Martin and Bonmati 2005). Finally, much previous research has concentrated on the potential statistical significance of the effect of employment uncertainty on fertility, largely disregarding the *magnitude* of the effect under interest.

Beside, group-specific explanations have often been neglected, but the implicit underlying assumption that people are all equally vulnerable to economic uncertainty is both logically thin and

empirically tenuous (Kreyenfeld 2010). How the link between economic uncertainty and fertility is affected by class differences remains unclear. 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; conversely, low educated women may not have much to lose by temporarily withdrawing from the labor market. On the other hand, highly educated women have greater economic resources and a more stable position in the labor market, and they may be better equipped to face hardships. The study of the reaction of different population social strata when exposed to adverse economic conditions is still under-investigated.

The aim of this work is to address these oversights in previous research as well as advance our understanding of the causal impact of economic uncertainty on fertility. By adopting a formal framework for causal inference based on the potential outcome approach (Neyman 1923, 1990; Rubin 1974), we focus on studying the effect of employment uncertainty on inter-individual differences in the propensity to have the first child. More specifically, our analysis addresses the following three questions: *Is a woman who has a temporary work contract less prone to have the first child than if she had a permanent work contract? Which would be the size of the proportion of first births if all women had a permanent job? Does the causal impact of employment uncertainty differ between different social classes?* Compared to classical methods for longitudinal and retrospective data, by adopting the potential outcome approach to causal inference (Imbens and Rubin 2015; Rubin 1974) we are able to quantify the net impact of a temporary work contract on first birth outcomes.

We outlined such an approach by studying a sample of women selected from the Italian Multipurpose Household Survey on Family and Social Subjects (FSS), conducted by the Italian Institute of Statistics (ISTAT) in November 2009. This is a large scale, nationally-representative survey of approximately 24,000 households and almost 50,000 individuals, with a response rate over 80%. The FSS survey is particularly suitable for the aim of this work, because it provides retrospective information on fertility, work, partnership, and education histories, as well as information on several background factors. In Italy, the spreading of flexible and temporary contractual forms has been the highest in Europe over the last decades, depicting this country as a meaningful case-study.

A Causal Inference Framework

In order to investigate the impact of economic uncertainty on the likelihood of having the first child, we selected all women aged 16-49 years old at the date of the interview, who were childless at the

beginning of the observation period and who worked at least three months during the observation period. Overall, the resulting working sample consisted of 5,927 women born between 1959 and 1993.

For estimating the effect of employment uncertainty on first births, namely the effect of having a permanent versus temporary job on first-child, we proposed a methodological approach based on propensity score matching (Rosenbaum and Rubin, 1983) applied to retrospective data. Our treatment variable was the binary indicator for the type of employment, equal to one for women with “temporary employment”, and zero for women with “permanent employment”. According to this categorization, the treated group was formed by those who had a temporary job, which comprised fixed-term jobs and atypical jobs: they both identify precarious forms of employment; with the latter being the least protected employment condition. The control group was formed by women who had a permanent employment; self-employed people were included into the “permanent employment” category. Given that employment condition may change over time, the treatment and control groups were defined year by year, from the beginning of the observation period, when respondents were 16, to the conception of the first child. Cases were left-censored at the interview date. Clearly, this specification implies that the risk set, including only women who worked at least three months at a given age, and the corresponding two treatment groups, changed over time.

Our outcome variable, measured at time t - where t varied from 16 years to 49 years, was the conception of the first child, which was by definition a binary outcome. Under the potential outcome framework, each woman had two potential outcomes: she might conceive or not a child if she had a permanent job, or she might conceive or not a child if she had a temporary job. Since each woman was only observed in either the treatment or control group, only one of the two potential outcomes was observed for each woman, and the counterfactual outcome needed to be estimated¹. Under the assumption of selection on observable, propensity score matching was used to match at each time t women - who were t years old - between the two groups of workers (see Rosenbaum and Rubin 1983). Specifically, for each woman aged t who had a temporary job (in the treatment group) we looked for one or more women of the same age who had a permanent work contract (in the control group) with the most similar characteristics.

In the set of the matching variables, we included both time-varying and time-constant covariates. Among the time-varying variables, we included: respondent’s educational level (i.e. 1 = “in education”; 2 = “primary education”; 3 = “upper-secondary education”; 4 = “tertiary

¹ If a woman had a permanent job, the counterfactual outcome was the conception (or not) of the first child if she had had a temporary job; if a woman had a temporary work contract, the counterfactual outcome was the conception (or not) of the first child if she had had a permanent one.

education”), partnership (i.e. 1 = “single”; 2 = “cohabiting”; 3 = “married”), the exit from the parental house (i.e. 1 = “still in the parental home”; 2 = “left the parental home”), and the calendar period (i.e. 1 = “before 1997”; 2 = “1997-2003”; 3 = “after 2003”). The purpose of the latter time-varying variable was to reflect key appointments in the flexibilization of the Italian labor market: the entry into force of the Treu Law (1997) and the Biagi Law (2003). Among time-constant covariates, we included: parents’ high education (i.e. 1 = “whether at least one parent possessed an higher educational level), mother’s work when respondent was 14 (i.e. 1 = “yes”), if parents split up when respondent was 14 (i.e. 1 = “yes”), the area of residence² (i.e. 1 = “North-West”; 2 = “North-East”; 3 = “Center”; 4 = “South/Islands”), and the number of siblings (i.e. 0 = “No brother/sister”; 1 = “One brother/sister”; 2 = “Two or more brothers/sisters”).

The outcome of interest, namely the conception of the first child or not, was measured the same year at which we matched individuals in order to capture the effect of having a temporary or a permanent job on the likelihood of having the first child. The causal estimand of primary interest was the Average Treatment effect for the Treated (ATT), which can be interpreted in our context as the average difference between the proportion of first child conceptions under temporary versus permanent job among those women who had a temporary job (the treated group) (Imbens and Rubin 2015).

We investigated potential gains or losses in the proportion of first birth conception for each age, measuring the ATT over periods of time corresponding to specific age groups, namely at 16-19, 20-24, 25-29, 30-34, 35-39, 40-49 years, and focusing on the net gain or loss in the proportion of first birth conceptions among the treated units measured over the entire period of observation.

First results

Our preliminary findings suggest that a considerable loss of births is attributable to having a temporary job, which confirms that employment uncertainty is becoming a dominant force driving contemporary fertility postponement. We continue the analysis by quantifying such “fertility loss” as well as by disentangling the effects of educational level.

²The area of residence was collected at the time of the interview. However, it is relatively trouble-free to use the macro-area of residence as a time-constant covariate because Italian internal mobility has been low over recent decades and mainly relegated within short distances only (Reynaud and Conti 2011).

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