Economic uncertainty and fertility outcomes in Greece: The "structural"-"distributional" effect of education level and employment status on male and female fertility levels

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Extended Abstract

1. Introduction

Over the last years, fertility research has often been oriented towards the relationship between economic uncertainty and reproduction behaviour. This relationship has been treated in various dimensions. Economic recession refers to a period of decline in economic activity that lasts longer than a few months. Symptoms of recession typically include restricted employment opportunities, rising unemployment rates, involuntary part-time work and heightened employment uncertainty. Those symptoms result in declining incomes and assets depreciation, without failing to mention the societal and psychological implications of economic crisis, which in turn might have an effect on fertility patterns and decisions.

In our study we tend to stress the implications of economic uncertainty on fertility levels in Greece but in a different way. In fact, the objective of our approach is twofold. Our first aim is to investigate the extent of male and female fertility differentials by education and employment within each gender over the period 2000-2011. Second, we tend to analyse how and to what extent educational level and employment status affect the over time variations in fertility levels of men and women separately. Educational level and employment status are not treated as determinants of reproduction behaviour but as factors that might have a "distributional" or a "structural" effect on fertility levels. In other words, we emphasise the impact of education-specific and employment-specific distributions on the over time variations in male and female fertility, and mainly over the years of economic recession (2008-2011).

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2. Data and methods

Data used in this analysis come from three different sources and they are all provided by EL.STAT. (Hellenic Statistical Authority). Data on births by age, highest educational level attained and employment status for both mothers and fathers were issued from vital statistics series. Two additional sources have been used, namely demographic data on average population and the Labour Force Survey, in order to obtain the average population by age, sex and by highest educational level attained and employment status (employed vs. non-employed). In fact, we have obtained that average population by combining the education and employment distribution by age and sex issued by the annual results of the Labour Force Survey with the demographic data regarding the average population. Data on births and estimations of the average population allows for the calculation of fertility rates by age, educational level and employment status for men and women as well as for that of the corresponding total fertility rate for the period 2000-2011.

3. Results

3.1 Main trends in employment rates and the distributions by education and employment

Over the study period and for both sexes, the education-employment distribution has moved in the favour from the employed person of high educational level, but it has remained rather stable over the period of the economic recession. In addition, the percentages of employed persons of low and, to a lesser extent, of medium educational level have decreased over time. This decreasing trend for the latest two educational levels was rather pronounced over the period of the economic uncertainty mainly because of the fact that the corresponding employment rates have marked a net decrease. In fact, between 2008 and 2011 the proportion of employed women of low educational level has moved from 11.0% to 9.1% and that of medium education level from 24.6% to 21.3%. The corresponding figure for men over the same period was from 28.7% to 22.7% and from 28.9% to 25.9%. In other words, during the period of the economic downturn, the education-employment distributional effect on overall fertility has become more related to the percentage of the non-employed persons of low and medium educational level than it was before.

3.2 Fertility by educational level and employment status for male and female population

Male fertility has remained rather stable over the first half of the 2000's, around 1.2 children per man. This trend was followed by a short period of increase, leading to the highest level of fertility in 2008, and has reduced over the period of the unstable economic conditions by reaching 1.15 in 2011. The relative stability of fertility between 2000 and 2005 is also observed within the various educational levels. However, in the second half of the 2000's some changes have occurred. In fact, men with low educational level exhibit decreasing fertility rates (from 1.26 in 2005 at around 1.0 in 2011) whereas fertility of those with medium and high educational levels, after a short increase up to 2008, has clearly decreased over the period 2008-2011. In 2011, differences in fertility by educational levels are much more pronounced than those in 2000. As for employment status, the results confirm the idea that male fertility is mainly related to fertility levels of employed people. It is also worth noting that, during the period of the economic recession (2008-2011), the total fertility rate of employed men has remained rather stable at a level of 1.5, which is higher than the level observed over the years 2000-2008.

Female fertility has marked a continuous increase during the 2000's by reaching a level of 1.53 children per women in 2009 followed by a steady decrease down to 1.43 in 2011. This trend is also observed across various educational levels. Moreover, differences in fertility levels by educational attainment are pronounced and rather constant over time. In fact, low educated women have clearly higher fertility compared with the two other educational groups; medium-educated women exhibit higher fertility levels than those with high education level. This last educational group has marked the most significant decrease in fertility level in 2011. In addition, over the more recent period (2010-2011) fertility decline has been much more significant for the non-employed than for the employed women.

3.3 The "structural" effect of educational level and employment status on male and female fertility

To separate out the effect of distributional changes on the total fertility rates over the period 2000-2011, we compare the changes that would have resulted from behavioral changes alone, if education and employment distributions were kept stable at 2000 level. In addition, we estimate the effect of changes in education distributions alone, by maintaining fertility rates and the employment distribution at the levels of the year 2000 and the effect of employment distributions by maintaining fertility rates and the education distribution at the year 2000

values. Moreover, in order to better emphasise the effect of distributional changes on fertility levels in the context of the economic recession, we repeat our approach for the period 2008-2011, by using 2008 as a reference year.

Our findings indicate that, the over time fertility variations for men and women have rather exclusively been generated by behavioral changes. The structural or distributional effect of both educational level and employment status is very limited. However, it is worth noting that this effect and in particular, that of the employment status, has become more important over the period of the economic recession (2008-2011). This mainly holds for men where, changes in fertility between 2008 and 2011 have almost exclusively resulted from changes in the employment-specific distribution and, to a lesser extent for women where the both effects go to opposite directions and therefore they cancel out.

4. Discussion and conclusion

The employment-specific distribution affects differently the overall male and female fertility. This is susceptible to indicate that, the effect of economic uncertainty and of restricted employment opportunities on fertility levels might be different between sexes, even if fertility behavior remains unchanged. In a context where being employed is a prerequisite for becoming a father, (as implied by the higher fertility levels of employed men compared to non-employed) decreasing employment rates are likely to generate lower fertility. Conversely, when fertility levels of the non-employed persons are significantly higher than that of the employed (which is the case of the low-educated non-employed women), shrinking employment rates are susceptible to lead to increasing overall fertility rates. We therefore suggest that further research on the economic recession and fertility nexus should not focus uniquely on female reproduction behaviour, since the socio-economic background of men and, in particular of their partners, is anything but irrelevant to fertility outcomes.