The Heterogeneous Effects of Having Children on Women's Income

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In this study we are interested in estimating the distributional effects of having children on women's annual income in the United States using the National Longitudinal Survey of Youth from 1979 to 2018. Existing work on motherhood penalty shows that while the income gap among men and women becomes smaller in the United States, the gap between mothers and childless women is increasing (Waldfogel 1998). After childbirth, women usually experience an immediate decrease in their earnings relative to what they would have earned if they had not become a mother. The gap closes somewhat over time though mothers never fully catch up to their counterfactual.

The knowledge of the heterogeneous effects of childbirth on mothers' income is important due to several reasons. First, most of the family policies are based on the average effect which may not be applicable in many cases. Having children which on average affects the women's income negatively, may have no effects or even some beneficial effects on other mothers. If career interruptions due to childbirth lead to lower wages for some mothers, then policies like more generous maternity leave or childcare assistance to those who experience the largest penalty would reduce the income gap among mothers and childless women (Waldfogel 1998,Carrasco 2001). Second, focusing on the distribution of the motherhood penalty can help scholars and policy-makers with a better understanding of parents' decisions about the size of the family (Zhang 2009). Lastly, for noisy outcomes like earnings and income the distributional analysis is more suitable.

Estimating the distributional effects of childbirth on mothers' income is challenging for two reasons. First, we need to compare the income distribution of mothers with their income distribution had they not had any children which is not observable. Following Athey and Imbens 2006, we use the Changes-in-Changes (CIC) analysis to estimate the counterfactual distribution of annual income for mothers from three known and observable potential outcome distributions. The second main challenge is that our parameter of interest (quantile of treatment effect on treated) depends on the joint distribution of annual income for mothers and their counterfactuals. Therefore, an additional assumption, like Rank Invariance, is required to associate the annual income of mothers with their counterfactuals. Women may keep or change their ranks in the income distribution after having children which are not observable even under standard identification assumptions like the selection on observables.

References

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