

# Single Mothers' Poverty Risks, Income Changes, and Union Formation Around Childbirth: Differences Between Women Who Conceived Spontaneously and Those Who Used Assisted Reproduction

Denise B. Musni<sup>1</sup> and Christine Schnor<sup>1</sup>

<sup>1</sup>Centre for Demographic Research (DEMO) – University of Louvain  
Louvain-la-Neuve, Belgium

## ***Background and Research Questions***

Childbirth is linked to household income losses, which are especially greater for women who had a child while single (Harkness, 2018; Stanczyk, 2020). Compounding this, single parent households, often headed by women, have significantly higher risks of being in poverty than two-parent households (OECD, 2022) primarily because of the lack of a second parent to share the costs of raising a family with. For separated women with children, re-partnering may be a way to recover from the strains of single parenthood (Fisher & Zhu, 2019; Jansen et al., 2009).

Little is known about how single parenthood impacts the economic situation of a small but growing number of women who planned to bear a child on their own, known as “solo mothers” or “single mothers by choice.” According to mostly qualitative research, solo mothers were typically in their late 30s to early 40s around the time of childbirth, from high socioeconomic backgrounds, and usually conceived via medically assisted reproduction (MAR) (Golombok, 2015; Hertz, 2008; Jadva et al., 2009). Given these characteristics, they might have been less impacted by income loss post-childbirth and less willing to get into a partnership post-birth.

In Belgium, around 12% to 14% of yearly births are to single women (Statbel, n.d.) and these rates have been stable in the past couple of years. Single women in Belgium also have long had access to publicly-covered MAR treatments. The state reimburses around 80% of costs of IVF or insemination for women under 43, regardless of their union status. According to fertility clinics, some 3,000 insemination cycles each year are for single women, representing a third of all inseminations (*Belgian Register for Assisted Procreation (BELRAP)*, n.d.). Moreover, birth records show that around 600 babies are born yearly to single women who used MAR. While there are many other ways to have a child on one's own, looking at this group of single women who used MAR to conceive may get us closer to quantitatively examining “solo mothers.”

This context makes Belgium a good setting for studying the heterogeneity of economic outcomes among women who have a child while single. Moreover, Belgian birth records offer unique information on the birth mothers' partnership status at the time the child's birth (single, married, legal cohabitation, or de facto cohabitation), as well as the mode of conception for the pregnancy (spontaneous, hormonal treatments, ICSI/IVF).

This study thus seeks to answer two questions:

- (1) How do poverty risk and income evolve around the time of childbirth for single mothers who conceived spontaneously and those who conceived via MAR?
- (2) How does having a partner relate to poverty risk and income changes post-birth?

### ***Data, Measures, and Analytic Strategy***

We use individual-level Belgian birth records linked to population registers and tax declarations provided by Statistics Belgium. Our analytic sample consists of 17,430 adult women aged 25 and over who had their *first child* between 2010 and 2014 while they were single ("*single mothers*"). In this study, single mothers are women who were not cohabiting with a partner during the time of her child's birth, according to combined information from the birth records and the population registers. We distinguish between "*spontaneous conceivers*" and "*MAR conceivers*" who used hormonal treatments or IVF/ICSI.

We use income from tax declarations to analyze three economic outcomes:

- (1) *poverty risk* or the likelihood of falling below the income poverty threshold
- (2) percentage change in yearly *individual income* relative to two years pre-birth
- (3) percentage change in yearly equivalized *household income* relative to two years pre-birth

For each single mother, we observe her poverty risks and individual and household income from two years before childbirth to five years after childbirth (y-2 to y+5). The original income variable was delivered to us in 5,000 EUR intervals. We took the midpoint of the intervals to make income a continuous variable and adjusted all values for inflation using the 2019 consumer price index.

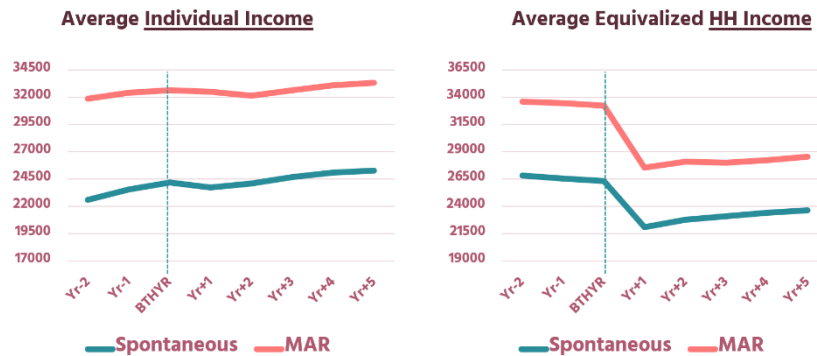
Women's *partnership status after birth* is another key measure in this study. This variable is retrieved from the household composition on 1 January of each year, as recorded in the population registers. Partnered women are those who were identified as a spouse or non-marital cohabitant in the household composition of the registers.

As a first modelling step, we estimate how single mothers' poverty risks, individual income, and household income evolved before and after childbirth, according to the mothers' mode of conception. Next, we analyze how getting into a partnership influences the three economic outcomes after birth, running separate models for spontaneous conceivers and for MAR conceivers. For models estimating poverty risk, we use mixed effects logistic regression, and for those estimating changes in individual or household income, we use mixed effects linear regression, both with random intercepts at the individual level. Results are shown as mean predicted values for ease of interpretation. All models are controlled for woman's age at the time of birth and educational attainment.

## Preliminary Findings and Initial Reflections

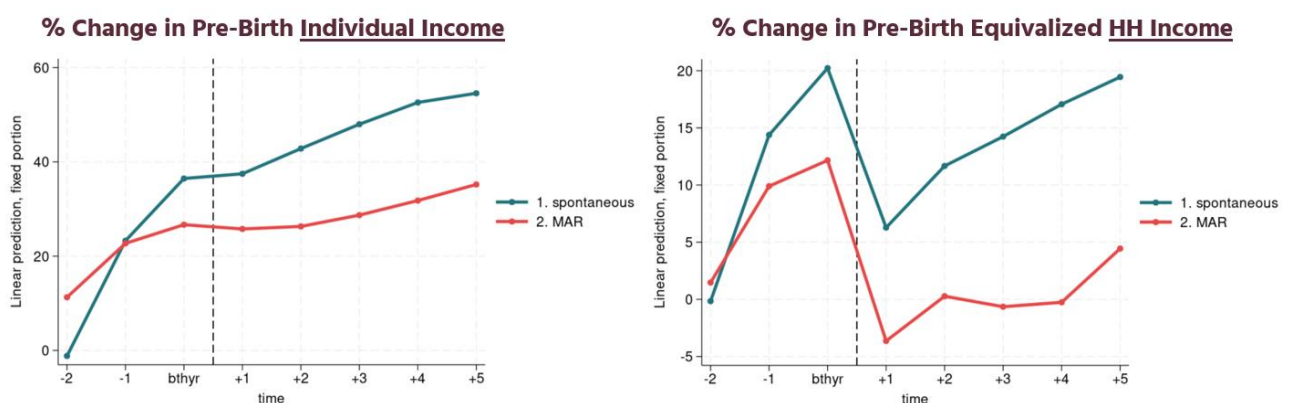
In our sample (N = 17,430), 8% of single mothers conceived using assisted reproduction. MAR conceivers were generally older than spontaneous conceivers (mean age 35.2 vs 30.8), and a larger proportion of had long-tertiary education (25% vs. 15%). MAR conceivers also had higher mean individual and household income (Figure 1). Sequence index plots reveal that 68% of MAR conceivers remained single from y-2 to y+5 compared to 41% of single mothers who conceived spontaneously.

Figure 1. Average individual and household income



The multivariate analysis shows that both types of single mothers experienced higher poverty risks in the year after childbirth, which progressively declined in the years that followed. Spontaneous conceivers had higher poverty risks than MAR conceivers, and the differences between the single mothers' poverty risks remained the same through all time points. For all single mothers, individual income rose over time, while household income dipped after childbirth and increased afterwards (Figure 2). Spontaneous conceivers experienced a more positive increase in both individual and household income, whereas the income lines for MAR conceivers appear flatter. Five years after childbirth, spontaneous conceivers had individual income that was 56% higher and household income that was 20% higher than pre-birth levels.

Figure 2. Multivariate results: individual and HH income changes



Getting into a partnership post-birth reduced poverty risks for all single mothers. Partnership also had a steady, negative association (-3%) with spontaneous conceivers' individual income, whereas it had no statistically significant association with MAR conceivers' own income. On the other hand, post-birth partnership was linked to an increase in household income by 26% (MAR conceivers) and 30% (spontaneous conceivers) compared to pre-birth levels. Figures for these results were omitted from this abstract but will be included in the presentation.

The results shed light on various issues faced by single mothers. Adding a child to a one-income household undoubtedly strains household finances, especially in the year following childbirth. Although MAR conceivers have higher baseline incomes, their flatter income trajectories suggest that they spend more years doing part-time work and raising their child on their own. What we cannot ascertain is if this is voluntary or if this shows difficulties in entering a partnership after childbirth. Partnership allows for the sharing of earning (and perhaps caring) responsibilities. Yet partnership is linked to a decrease in spontaneous conceivers' individual income, which may thus limit these women's financial independence.

Before the conference, we will try other thresholds for income poverty, model individual and household income *values* instead of relative change, and see whether results change if we take only single mothers who did not declare a father for their child. We will also enhance the interpretation and discussion of the results.

## References

- Belgian Register for Assisted Procreation (BELRAP). (n.d.). Retrieved December 15, 2022, from <https://www.belrap.be/Public/Default.aspx>
- Fisher, H., & Zhu, A. (2019). The Effect of Changing Financial Incentives on Repartnering. *The Economic Journal*, 129(623), 2833–2866. <https://doi.org/10.1093/ej/uez011>
- Golombok, S. (2015). Solo mother families. In *Modern families: Parents and children in new family forms* (pp. 138–162). Cambridge University Press.
- Harkness, S. (2018). The economic consequences of becoming a lone mother. In L. Bernardi & D. Mortelmans (Eds.), *Lone parenthood in the life course* (pp. 213–234). Springer International Publishing. <https://library.oapen.org/bitstream/handle/20.500.12657/27772/1/1002233.pdf#page=219>
- Hertz, R. (2008). *Single by chance mothers by choice: How women are choosing parenthood without marriage and creating the new American family*. Oxford University Press.
- Jadva, V., Badger, S., Morrissette, M., & Golombok, S. (2009). 'Mom by choice, single by life's circumstance...' Findings from a large scale survey of the experiences of single mothers by choice. *Human Fertility*, 12(4), 175–184. <https://doi.org/10.3109/14647270903373867>
- Jansen, M., Mortelmans, D., & Snoeckx, L. (2009). Repartnering and (Re)employment: Strategies to Cope With the Economic Consequences of Partnership Dissolution. *Journal of Marriage and Family*, 71(5), 1271–1293. <https://doi.org/10.1111/j.1741-3737.2009.00668.x>
- OECD. (2022). *Supporting single parent families. In Evolving Family Models in Spain: A New National Framework for Improved Support and Protection for Families*. OECD Publishing.
- Stanczyk, A. B. (2020). The Dynamics of U.S. Household Economic Circumstances Around a Birth. *Demography*, 57(4), 1271–1296. <https://doi.org/10.1007/s13524-020-00897-1>
- Statbel. (n.d.). *Statistique des naissances et de la fécondité 2011-2022 (datasets)*. <https://statbel.fgov.be/en/themes/population/births-and-fertility#figures>