The demographic effects of armed conflict Evidence from the 1980 Guatemalan genocide

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IUSSP 02-10-17 - 'Measuring and interpreting social exclusion'

Post-conflict fertility behaviour (short and mid-term)

- 1. Fertility drops during mortality crises
 - Malnutrition, psychological stress, changes in marital behaviour (Abu-Musa et al., 2008)
- 2. Followed by temporary surges in fertility
 - Post-WWII 'baby-boom' (Van Bavel & Reher, 2013)
 - Angola (Agadjanian & Prata, 2002); Cambodia (Heuveline & Poch, 2007)
 - China after the 1958-1961 famine (Ashton, 1984)
- 3. Higher fertility amongst young women (Cetorelli, 2014; Nobles et al., 2015)

Why does fertility increase after conflict?

- 1. Replacement effects
 - 1.1~ Own-child mortality (Hossain et al., 2007)
 - 1.2 Collective mortality (Nobles et al., 2015)
- 2. Influence of population structure
 - 2.1 Delayed childbirth (Van Bavel & Reher, 2013)
 - 2.2 Spouse separation-reunification (Heuveline & Poch, 2007)

We do not know enough about the mechanisms.

The case: Genocide in Rio Negro

- Guatemalan civil war (1960-1996)
- ▶ Rio Negro, a Mayan community (~1000 inhabitants)
- 44% population killed in mass killings around 1982



Research questions

- 1. Who drove the fertility recovery after the conflict in Rio Negro?
- 2. What explains the differentials in **levels of fertility** and **timing of childbearing** across groups of women?

Fertility analysis

- 1. Number of births after the conflict:
 - 1.1 Cohort fertility rates
 - 1.2 OLS linear regression
- 2. Timing of births after the conflict:
 - 2.1 Age-specific fertility rates
 - 2.2 Discrete-time event history analysis

Table 1: Cohort composition (women only)

Years of birth	Cohort size
1953-1962	159
1963-1972	246
1973-1982	395
	Years of birth 1953-1962 1963-1972 1973-1982

Data

- Demographic data on one population (1960-2015)
 - Complete demographic history of 3556 individuals
 - Reconstructed from 100 genealogical interviews
- Fieldwork Nov 2015 Nov 2016

Family id: 37

Family id: 74



Rio Negro population (1950-2016)

Observations: 3566



Did fertility recover after the genocide?



Mortality 1: Conflict-deaths by cohort



Mortality 2: Mortality within the family

Table 2: Percent of relatives lost in conflict by birth cohort.

	Own-child mortality		Relatives lost
Age genocide	Had child	Lost child	Nuclear family
20-29	88.00	46.74	17.22
10-19	13.33	4.72	10.88
0-9	0.00	0.00	7.79

Fertility 1: Total number of children



Fertility 2: Timing of childbirth



Who drove the fertility recovery after the conflict in Rio Negro?

- 1. Post-conflict fertility increased in all cohorts
- 2. Young women (10-19) mainly responsible for 'baby boom'
 - 2.1 Higher post-conflict fertility ($\beta = 1.3, p < 0.001$)
 - 2.2 No evidence of earlier age at first birth

$\mathsf{Discussion} > \mathsf{RQ}\ 2$

What explains the differentials in total fertility and timing of childbearing across groups of women?

- 1. No evidence of own-family replacement fertility
 - 1.1 No higher fertility after own-child death ($\beta = -0.35$, p = 0.53)
 - 1.2 Loss of relatives associated with lower fertility ($\beta 0.07, p < 0.001$) and delayed first birth after genocide (OR = 0.99, p = 0.05)
- 2. Stronger evidence of collective response to mortality
 - 2.1 Women with more **live relatives** likely to have earlier births after genocide (OR = 1.12, p < 0.001)
 - 2.2 Social pressure or agency?

Conclusions

Age at conflict is important

- 1. Fertility increased for women of all ages
 - $1.1\,$ But younger women had more years of reproductive life ahead
- 2. Exposure to conflict associated with lower fertility
 - 2.1 Older women more affected by the conflict (mortality, sexual violence, stigma)
- 3. Advisable to consider age-sex structure of the population

Limitations

- 1. Unobserved external factors
- 2. Data quality limited cohort selection
- 3. Limited generalisability

Thank you!

The data collection and processing tools are available online: www.alburez.me/genealogy