

The Long-Term Impacts of the Sahel Famine for Survivors in Mali

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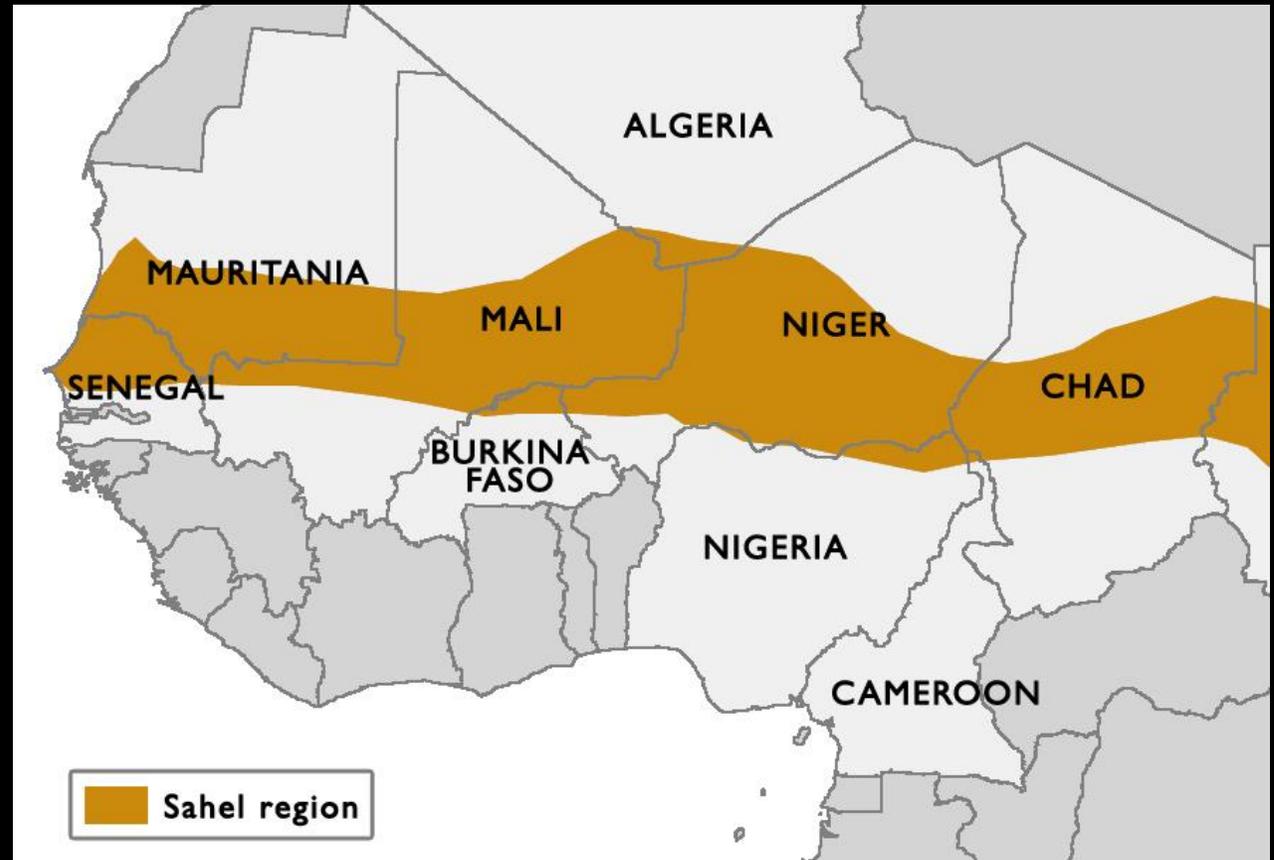
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What was the Point?

- Poor health in early life can lead to a stunting of physiological and psychological development.
 - Long-term consequences for health, human capital formation and material outcomes.
- Famines provide a quasi natural experiment in which to study these effects.

The Famine

- Famine in the Sahel belt of Africa.
- Triggered by a severe drought beginning in 1969.
- 1972 – early 1974.
- Famine was most severe in Mali, Mauritania and Niger.



Research Problems

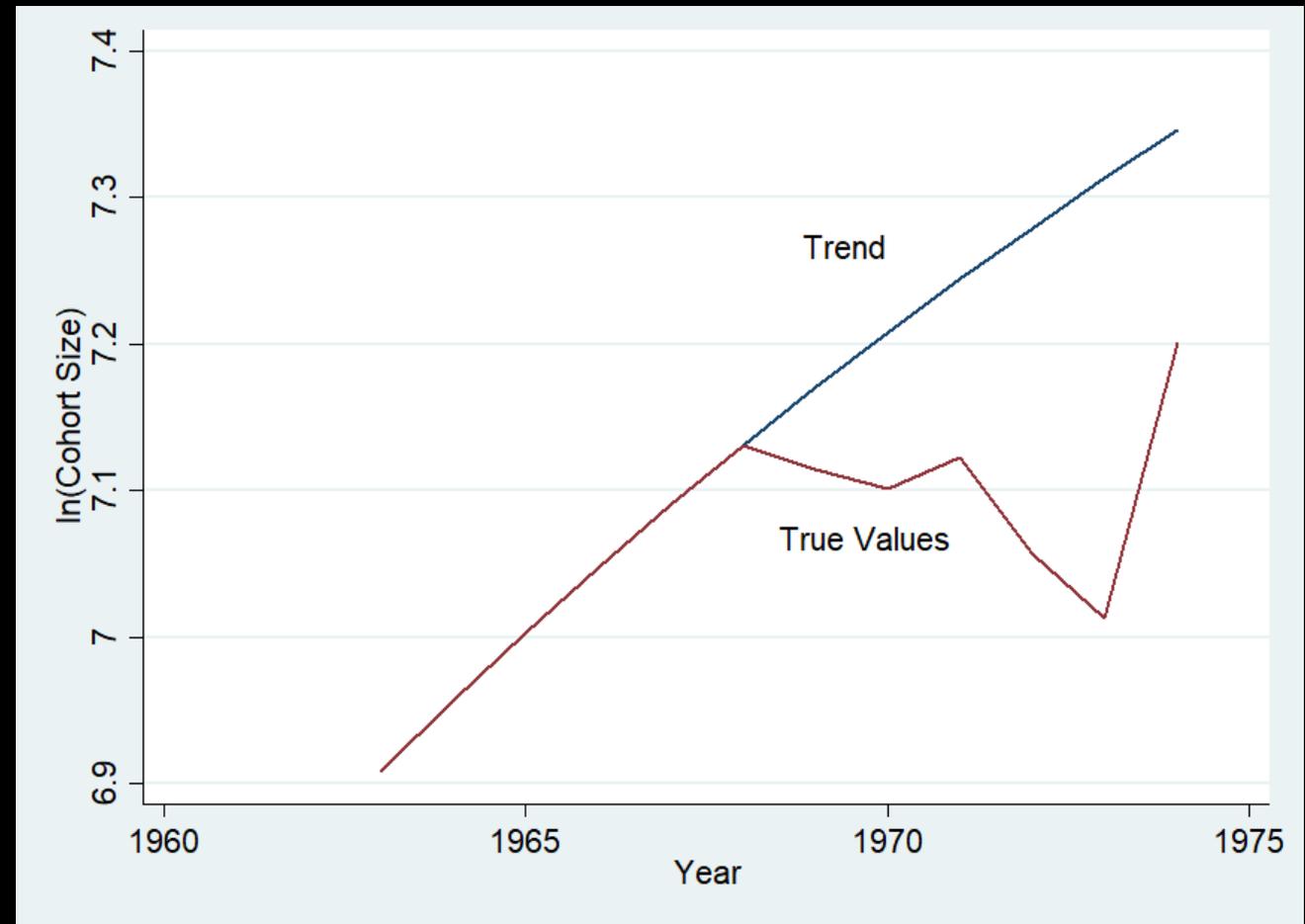
- Identifying the correct variation:
 - Who was exposed at critical ages and where?
 - How intensely were they exposed?
 - What are their outcome variables?
- Large shock problems:
 - OVB.
 - Survivor Selection.

Data

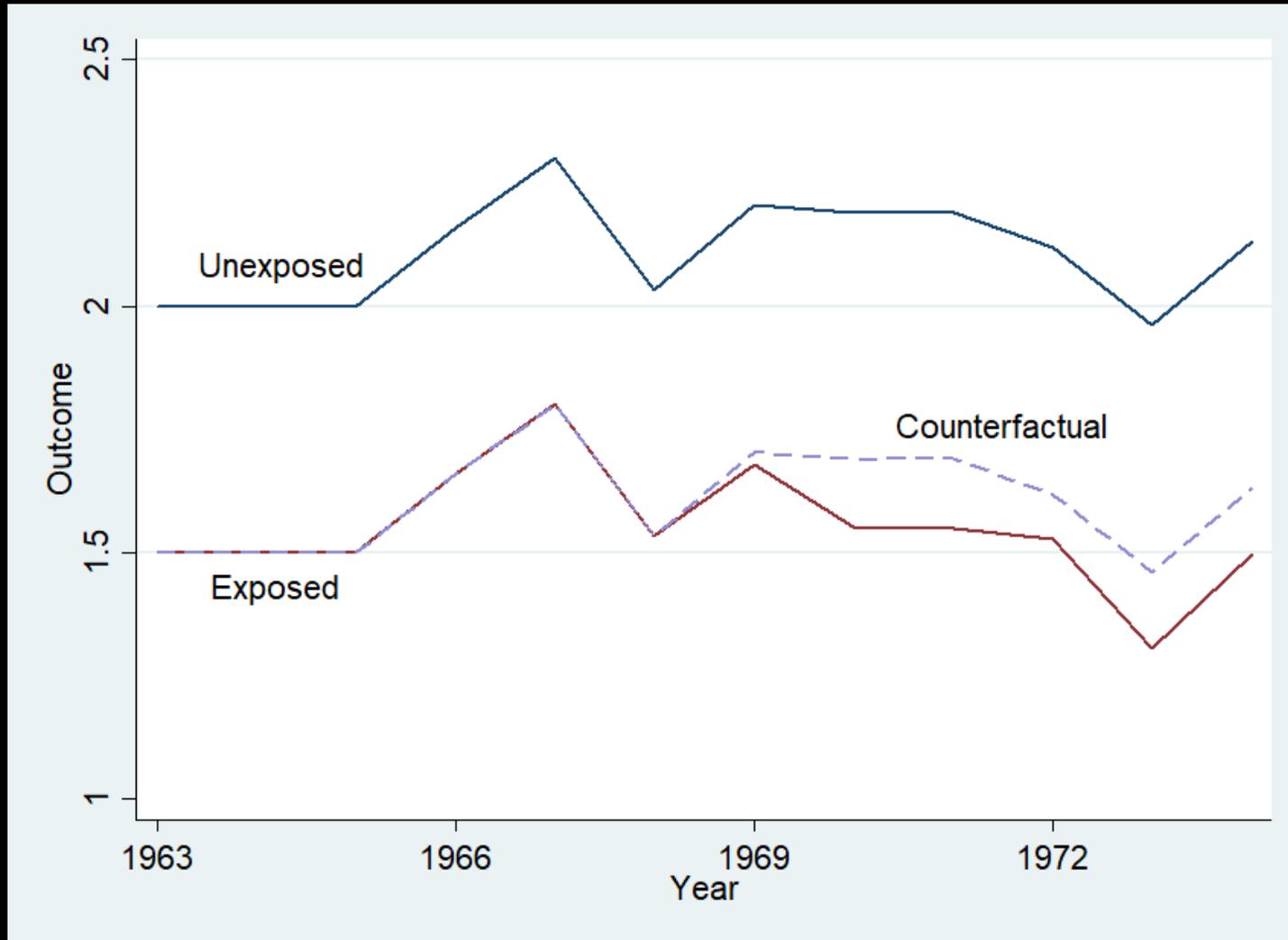
- 1998 General Population & Housing Census:
 - Identifies when and where people were born.
 - Outcome variables: disability status, literacy, school attendance, years of schooling, socioeconomic index.
- Goodman et al (2019):
 - Data on yearly average precipitation, cercle-level.

Strategy – Variation in Famine Intensity

- Spatial variation in famine intensity:
 - What is the share of people 'missing' in birthyear cohorts which were likely worst affected by the famine?
- Rural sample only.



Strategy – Identifying Impacts



Strategy - Biases

- OVB (& measurement error) → Instrumenting Famine Intensity.
 - % Deviation in precipitation levels in years of famine vs average of the 17 years prior.
- Survivor Selection → Quantile Regression.

Results

- There does appear to be some scarring impact of the famine.
- Men worse affected than women.
 - More negative health impacts and more negative education impacts.
- Little indication of long term effects for material wellbeing.

Conclusions

- Regional variation in famine intensity was exploited to give an overview of the long term impacts of the Sahel famine.
- Problems do remain with regards to:
 - Material outcome data.
 - Initial levels of educational attainment.
 - Heterogeneity within cohorts.

Equations I

$$\ln(\mathit{Cohort}_{ct}) = \alpha_{0c} + \alpha_{1c}t + \varepsilon_{ct}$$

$$-\hat{\varepsilon}_{ct} = \ln(\widehat{\mathit{Cohort}}_{ct}) - \ln(\mathit{cohort}_{ct})$$

$$\mathit{intensity}_c = \frac{-\hat{\varepsilon}_{c,1972} - \hat{\varepsilon}_{c,1973}}{2}$$

Equations II

$$y_{ict} = \gamma_c + \rho_t + \sum_{\tau=1969}^{1974} \beta_{\tau}(\rho_{\tau} * intensity_c) + u_{ict}$$

$$y_{ic\tau} = \gamma_c + \rho_{\tau} + \beta_{\tau} intensity_c + u_{ic\tau}$$

$$intensity_c = \sum_{t=1969}^{1973} \delta_t \rho_{\tau} precipdev_{ct} + \rho_{\tau} + \gamma_c + v_c$$