Understanding Geographic Disparities in Mortality

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Motivation

- Growing evidence that **early life shocks** affect outcomes later in life, including **health** and **migration** outcomes
- Life expectancies are constructed by grouping deceased individuals by their **place of residence later in life** (*e.g.*, place of death)
- Potential **misrepresentation** in spatial mortality inequalities by ignoring critical role of early-life exposures

Data

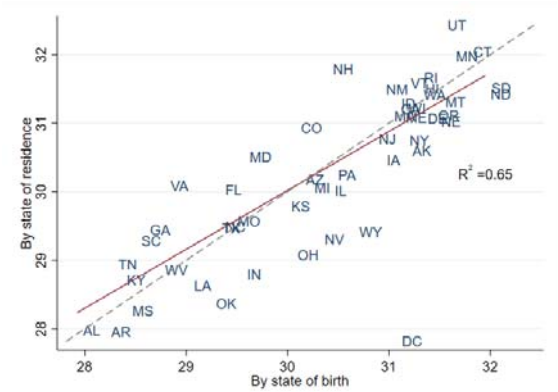
- **Mortality Disparities in American Communities**: 2008 American Community Survey (ACS) linked to official death records
- **Big, nationally representative sample**: $>$ 4.5 million people
- Matches ∼308,000 individuals to a mortality file from 2008-2015
- Key information from ACS: **State of birth**; **State of residence**

Methods

- Partition 2008 ACS sample with age 50+ in two ways: By state of residence in 2008 (**SoR**); By state of birth (**SoB**)
- Compute **life expectancies at age 50** using standard demographic methods (Gompertz), by gender and SoB / SoR

Comparison between measures

Male life expectancy at age 50, by SoB and SoR



Research Summary

Research Question:

1. How does the **pattern in geographic disparities in mortality** change using life expectancies by **state of birth**?

Approach:

- Construct **life expectancies by state of birth** and compare them with commonly used life expectancies by state of residence

Main Results:

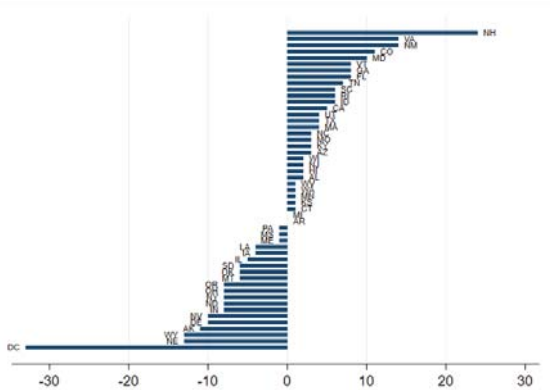
1. **Regional inequality** in mortality outcomes is **higher** if we aggregate individuals by their state of birth

Some quantitative results

- Difference in two measures is **>1 year** for **NH, VA, DC** & **WY**
- Relationship between the two life expectancies measures is **weaker for men** than for women
  - Men: $R^2 = 0.65$; mean absolute deviation = 0.51 years
  - Women: $R^2 = 0.82$; mean absolute deviation = 0.34 years
- Result **not mechanically driven by different migration propensities** across genders

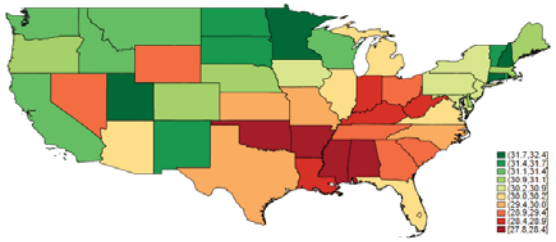
Rank reversals

Difference in ranks of male life expectancy: SoR - SoB

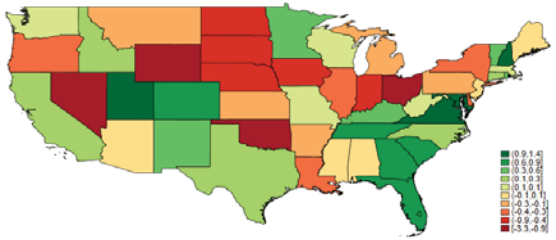


Mapping mortality inequality in the U.S.

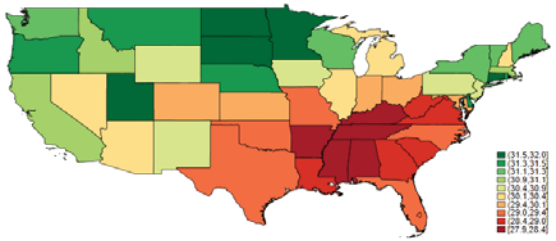
Male life expectancy at age 50, by state of residence



Difference in male life expectancy measures, SoR - SoB



Male life expectancy at age 50, by state of birth



Final remarks

1. **Regional inequality** in mortality outcomes is ***exacerbated*** if we measure life expectancies by state of birth
2. Suggestive results that **migration *mitigates*** the baseline **regional inequality** in mortality outcomes (Ezzati et al., 2008)
3. Results are slightly more nuanced for women

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