Effects of Rurality on Long-Term Health Outcomes

Literature

1. Retirees choosing to move from urban places to more rural areas
   a. Lack of healthcare access
   b. Friendly neighbors, slower pace of life
2. Natural experiments examining the impact of moving/migration on health
   a. Does When You Die Depend on Where You Live? Evidence from Hurricane Katrina (American Economic Review 2020)
   b. The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment (AER 2016)
3. Contribution: A number of studies looking at the impact of rurality of childhood residence on health, but none on the effects of migration from urban to rural areas

Data

- ○ Includes detailed economic and health information in the survey
- ○ Largest representative sample of Americans over age 50
- ○ Created in 1990 by Act in Congress to provide data for the study of health and retirement
- ○ Spans 1992 - 2018, administered biannually

Variables of Interest

Independent Variables: Population Density of Place of Residence

- Based on the 2013 Beale Rural-Urban Continuum codes
  - 1 for Urban
  - 2 for Suburban
  - 3 for Rural

Dependent health outcome variables

- Cancer (0 or 1), Arthritis (0 or 1), Psychiatric conditions (0 or 1), Cognition (scale from 0 to 27), and self-rated health (scale from 1-5)

U.S. Population Density by County
2020
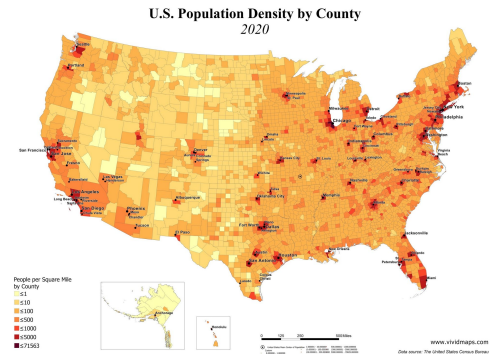
Method: Naive Regression

$$\text{Health}_{it} = \beta \text{Lagged\_Density}_{it} + \gamma X_{it} + \lambda_t + \Theta_i + \epsilon_{it}$$

Lagged_Density = 2013 Beale code for place of residence in previous wave
X_{it} = vector of controls
λ_t = time fixed effects
Θ_i = U.S. Census region-division fixed effects

Table 1: Estimated Equations

|	Dependent variable:				
	Cancer	Self-rated health	Cognition	Psychiatric	Arthritis
	probit	*OLS*	*OLS*	*probit*	*probit*
	(1)	(2)	(3)	(4)	(5)
beale2013 lag 1	0.016	-0.012	0.515***	-0.160***	-0.140***
	(0.042)	(0.028)	(0.147)	(0.042)	(0.037)
beale2013 lag 2	0.111**	-0.097***	0.827***	-0.257***	-0.041
	(0.053)	(0.036)	(0.186)	(0.057)	(0.047)
beale2013 lag 3					
Birth year	0.015	-0.010	0.075	-0.004	0.021
	(0.032)	(0.023)	(0.106)	(0.034)	(0.029)
Age	0.040	0.001	-0.167	-0.016	0.048*
	(0.032)	(0.023)	(0.107)	(0.034)	(0.029)
Gender	0.133***	-0.131***	0.832***	0.248***	0.243***
	(0.038)	(0.023)	(0.141)	(0.038)	(0.030)

Method: Differences-in-Differences

$$\text{Health}_{it} = \beta \text{Destination*YearsMoved}_{it} + \gamma X_{it} + \lambda_t + \Theta_i + \epsilon_{it}$$
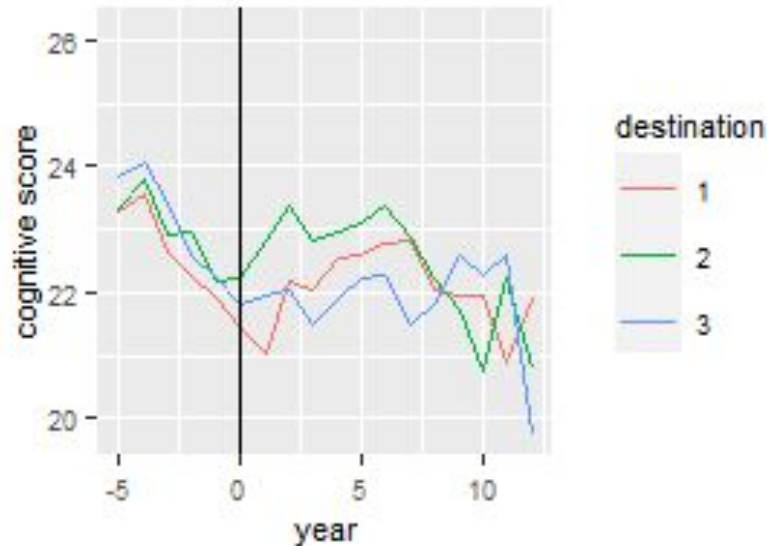
- Sample = individuals who moved once during the span of the survey who originally lived in an urban area
- Destination = 2013 Beale code of move destination
- YearsMoved are the years of the survey normalized to represent the number of years since the participant moved. (0 for year of the move)

$$\text{Health}_{it} = \beta\text{Destination*YearsMoved}_{it} + \gamma X_{it} + \lambda_t + \Theta_i + \epsilon_{it}$$
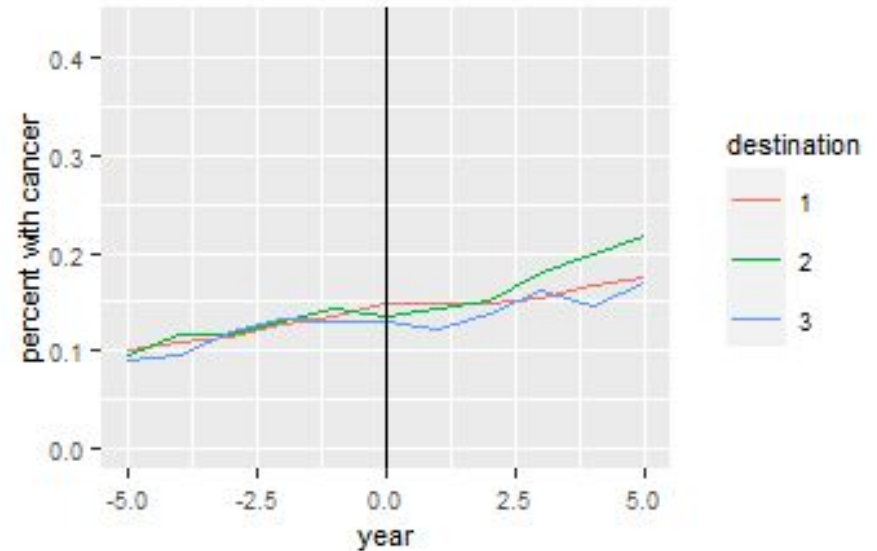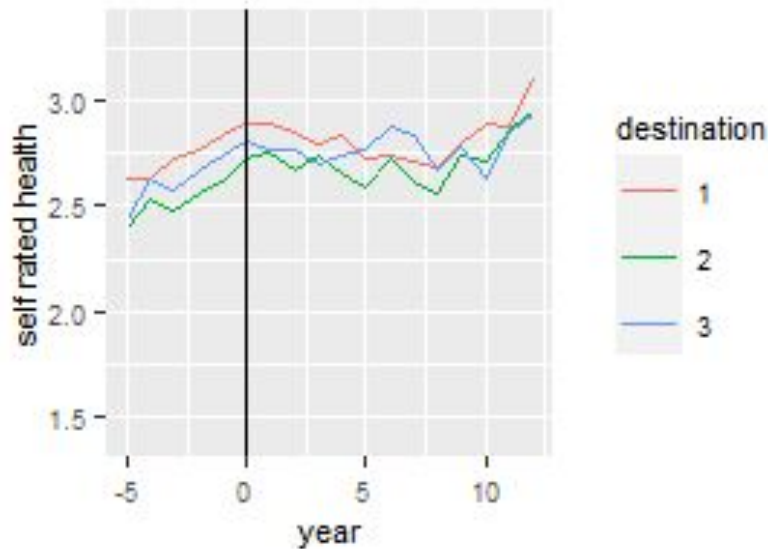
The Heckman Correction

Two step process:
1. First, estimates the probability that an individual drops out of the survey at a given wave (assigning 1 or 0)
2. Second, only estimates the final equation with the individuals who "survive" (previously assigned 1)