# The Long-Term Effects of Medicaid Exposure in Early Childhood

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# Aim and approach

- Research Question
  - Does exposure to Medicaid in early childhood improve health and economic outcomes in adulthood?

- Empirical Challenge
  - Unobserved selection into the program
    - Use state-by-time variation in Medicaid using to measure the effect of exposure to policy

# Motivation

- Medicaid exposure earlier in childhood improves outcomes later in childhood
    - Self-reported health, mortality, academic achievement
- Mechanisms
    - Improvements in child health that persist over-time
    - Improvement in family economic resources
- Contribution
    - Do benefits persist into the adult period?

(Currie & Almond, 2011; Currie et al., 2008; Meyer & Wherry, 2012; Levine et al., 2009 )

# Study setting

- Staggered timing of Medicaid's introduction across the states

  - Created variation in the amount of early life exposure to Medicaid

- Enacted in 1965

  - Roll out mainly occurred between 1966-1970

  - By 1972, all but 1 state had a program

# Components of Medicaid

- Prior to Medicaid health services for poor children were limited
- Mandated that all people receiving cash welfare (AFDC) were to be automatically enrolled
  - Income thresholds for eligibility were low
- Covered services with no copay
  - Physician services, hospital stays, lab and x-ray
- 4.5 million child participants by 1976

# Short-term effects

- Two papers find substantial effects to short-run health
  - In groups targeted by Medicaid
    - 60% reduction in the incidence of low birth weight
    - 24% reduction in child mortality
- Other work from this project
  - 51% increase in hospital utilization among young low-income children

(Decker and Gruber 1993; Goodman-Bacon 2013; Boudreaux, 2014)

# Medicaid adoption by quarter and year
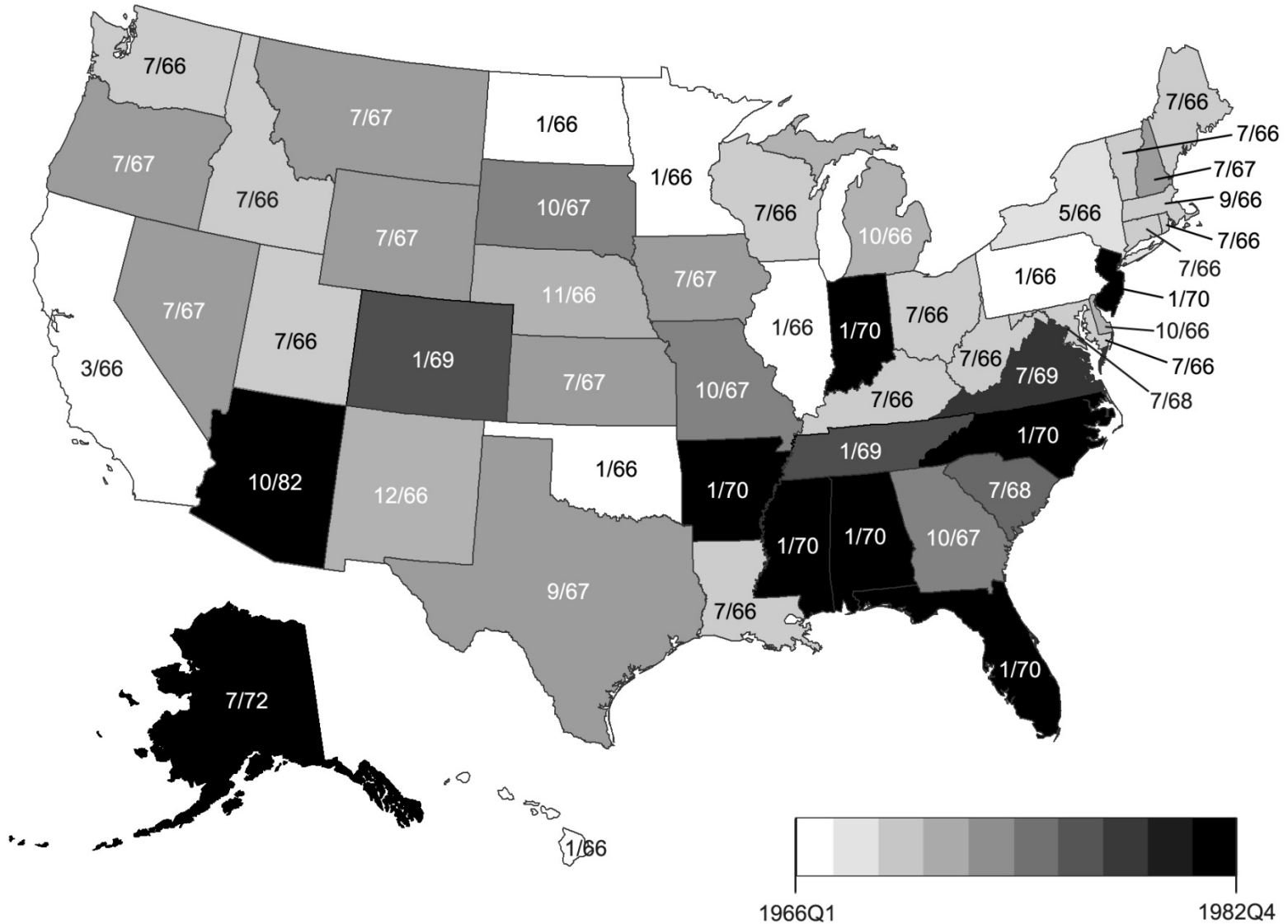
# Timing of Adoption

- Many things were changing around Medicaid's introduction
  - Other social programs and changing health care markets
- 3 strategies to account for coincident changes
  - Control for observed changes in social policy and health markets
  - State specific time trends
  - Compare target and placebo groups

# Data

- 1968-2009 Panel Study of Income Dynamics
  - Follows respondents and their descendants
  - A large oversample of low income families
- Key measures
  - Health (chronic conditions)
  - Economic status (education, income, wealth)
  - Demographic information (place and time of birth)

# Sample selection

- 1955-1980 birth cohorts
  - 5 cohorts with no Medicaid exposure prior to age 6
  - 11 cohorts w/exposure starting in early childhood
  - 10 cohorts exposed starting *in utero*
    - I drop AZ (< 1% of sample)
- A sample of adults (Age 18-54 )
  - Average age is 37 at follow-up
  - Attach childhood characteristics
    - Define childhood exposure and isolate subgroups targeted by the program

# Medicaid exposure

- Share of months from conception to $6^{th}$ birthday ("early childhood")
  - Calculated based on state of birth
  - Range is [0,1]
  - A function of time and place of birth
  - Measures exposure to policy, not participation

# Average months exposed
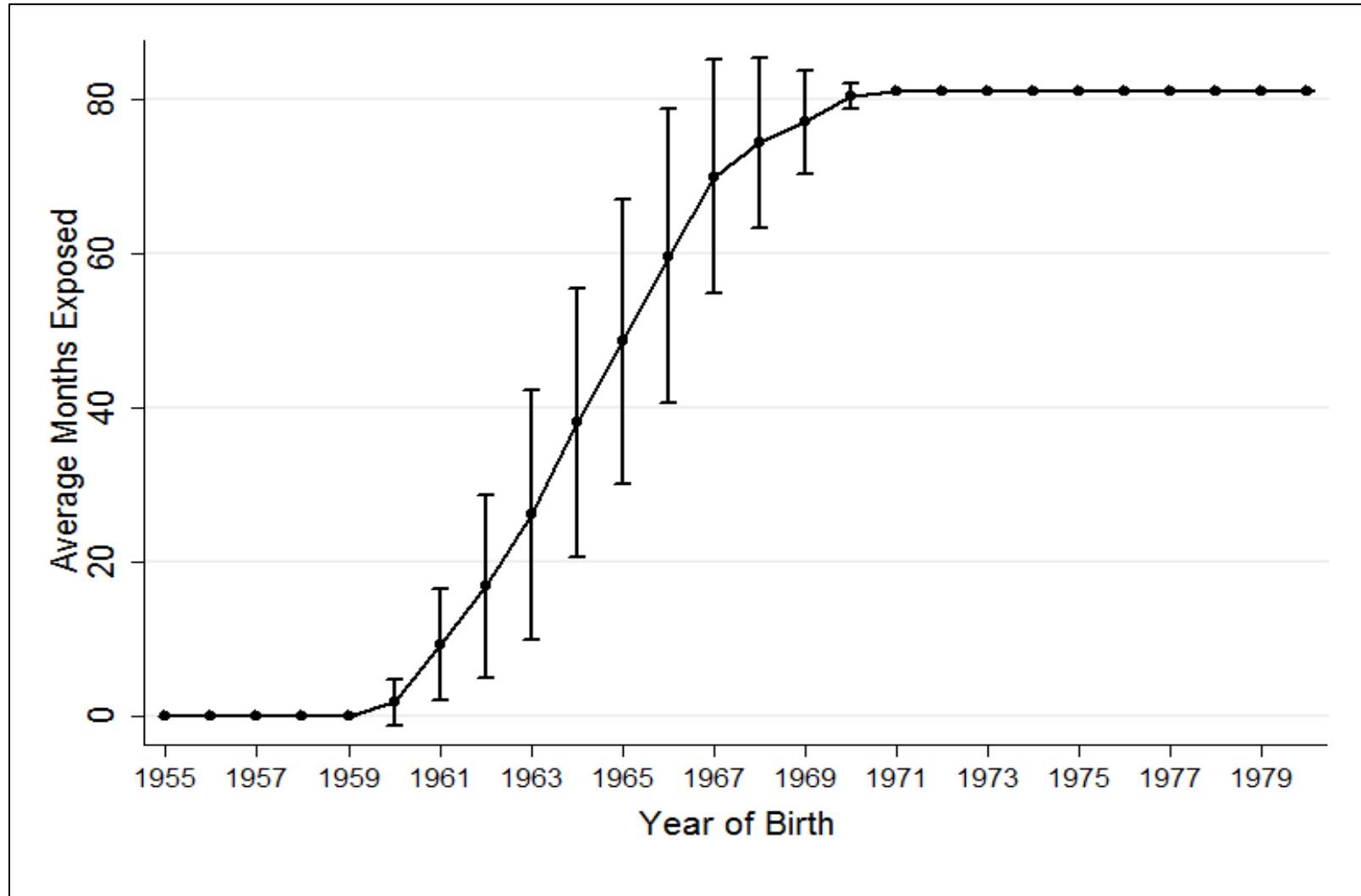
# Outcome Indexes

- Indexing improves precision and reduces problems associated with multiple comparisons
  - Equally weighted mean of z-scores
- Chronic Condition Index ($\bar{x}$=-0.03; sd=0.6)
  - Hypertension, diabetes, heart disease, obesity
- Economic index ($\bar{x}$=0.3; sd=0.9)
  - Years of education, poverty level, family wealth

(Anderson, 2008; Hoynes et al. 2013)

# Models

$$y_{inst} = \lambda MCAIDSHARE_{st} + \beta X_{inst} + \phi Z_{st} + \rho_n + \delta_t + \gamma_s + (\gamma_s * t) + e_{inst}$$

- OLS

- Sample weights adjust for initial selection and attrition

- Standard errors clustered on state of birth (Bertrand et al. 2004)

# Target vs placebo groups

- Low income (< 150% Poverty Line)
  - Average level in the early childhood period
    - Any AFDC in childhood: 40%
  - Placebo group: Moderate Income (175-300)
- Predicted probability of AFDC participation
  - Vary across 16 demographic groups
  - From 1976-1977 PSID

# The effect of Medicaid in childhood on adult health and economic status

| | Low Income | | Moderate Income | |
|---|---|---|---|---|
| | Effect of Medicaid | | Effect of Medicaid | |
| | Exposure | SE | Exposure | SE |
| **Condition Index** | -0.36** | 0.13 | 0.05 | 0.12 |
| Sample Size | 5,926 | | 5,695 | |
| Mean of Y | -0.01 | | -0.14 | |
| $R^2$ | 0.21 | | .15 | |
| **Economic Index** | -0.11 | .21 | -0.03 | 0.14 |
| Sample Size | 5,973 | | 11,210 | |
| Mean of Y | -0.24 | | -0.2 | |
| $R^2$ | 0.33 | | .12 | |

*p<0.1; **p<0.05; ***p<0.01

Models control for demographics, contextual controls, fixed effects

# Predicted AFDC Participation Models

|  | Condition Index | | Economic Index | |
|---|---|---|---|---|
|  | Coef. | SE | Coef. | SE |
| Medicaid Exposure | -0.03 | 0.08 | -0.16 | 0.14 |
| Exposure*Predicted Participation | -0.88* | 0.45 | -0.07 | 1.10 |
| Sample Size | 18,094 | | 17,970 | |
| Mean of Y | -0.04 | | 0.19 | |
| $R^2$ | 0.12 | | 0.25 | |

*$p<0.1$; **$p<0.05$; ***$p<0.01$

Models control for demographics, contextual controls, fixed effects

# Robustness

- School and Hospital desegregation
  - Results robust to removing southern born non-whites
- Selective migration
  - Robust to removing cases that moved states in the early childhood period
- GEE specification

# Limitations

- I can not identify exact mechanisms
  - Economic resources
  - Health
    - But what services, specifically?

- Can not determine if there is a critical period embedded in the early childhood years

# Summary and Implications

- Exposure to Medicaid in early childhood appears to decrease the prevalence of adult chronic conditions, but no evidence of economic impact
  - Point estimate implies a reduction in the probability of having one chronic condition of 0.4
- This study suggests that providing health insurance at early ages produces long-term benefits for low income children

# Thank You

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