



What Can We Learn from a Panel Study of Neighborhoods and Child Maltreatment?

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Presentation Overview

- Background
- Data and Methods
- Results
- Conclusions
- Implications
- Limitations



Neighborhood Conditions and Maltreatment Rates

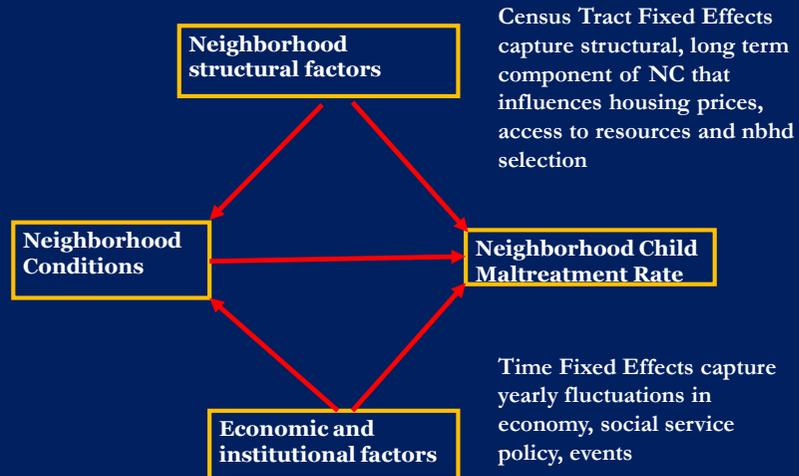
- Child maltreatment affects 1 in 5 children in USA (CDC, 2010; Finklehor et al., 2010)
- Profound physical, psychological, behavioral effects on children (Wegman & Stetler, 2009)
- Besides human cost (inestimable), \$100 billion per year in estimated material costs
- Cross-sectional associations between maltreatment rates and neighborhood social conditions (Coulton et al., 1999; Freisthler, 2004).

Neighborhood Conditions and Maltreatment Rates

- Neighborhood conditions (NC) encompass economic status, resources, infrastructure, social and institutional organization
- By influencing community stress levels, trust and collective efficacy, NC can indirectly affect child maltreatment
- We use poverty, household composition, crime, housing
- Goal is to estimate relation of NC and nbhd maltreatment rates accounting for relevant confounders



Conceptual Model



From Cross-Section to Panel Data Analysis

- Relevance of neighborhood social conditions is unclear across cross-sectional studies (Coulton et al., 2004).
- Existence of potential biases due to:
 - Unobserved neighborhood characteristics and composition (infrastructure, health)
 - Changes at the regional or national level over time (economy, federal policies)are addressed by census tract and time fixed effects
- Enhances understanding of the implication of changes in neighborhood social conditions on child maltreatment.

Fixed Effects Model of Neighborhood Conditions and Maltreatment

- Census tract fixed effects control for:
 - Aggregate of unobserved non-time varying factors influencing neighborhood selection
 - Neighborhood characteristics (housing stock, proximity to downtown) that change little over time

- Year fixed effects control for changes over time that apply to all census tracts such as:
 - Cultural shifts, economics trends, social welfare policy, etc.

- Spatial Error Model with first order contiguity weights account for spatial autocorrelation.

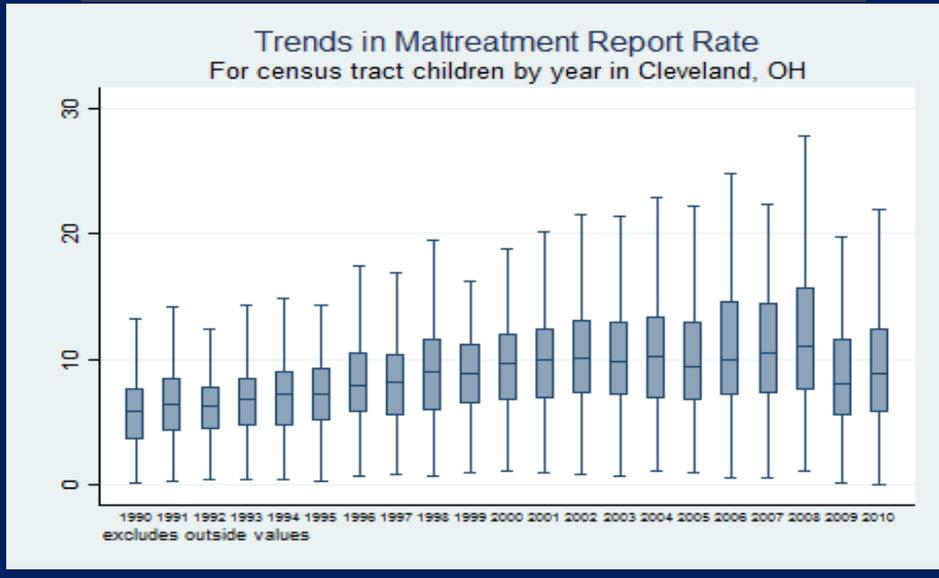
Neighborhood Context and Child Maltreatment Study

- Mixed methods study in Cleveland, OH, 1990-2010

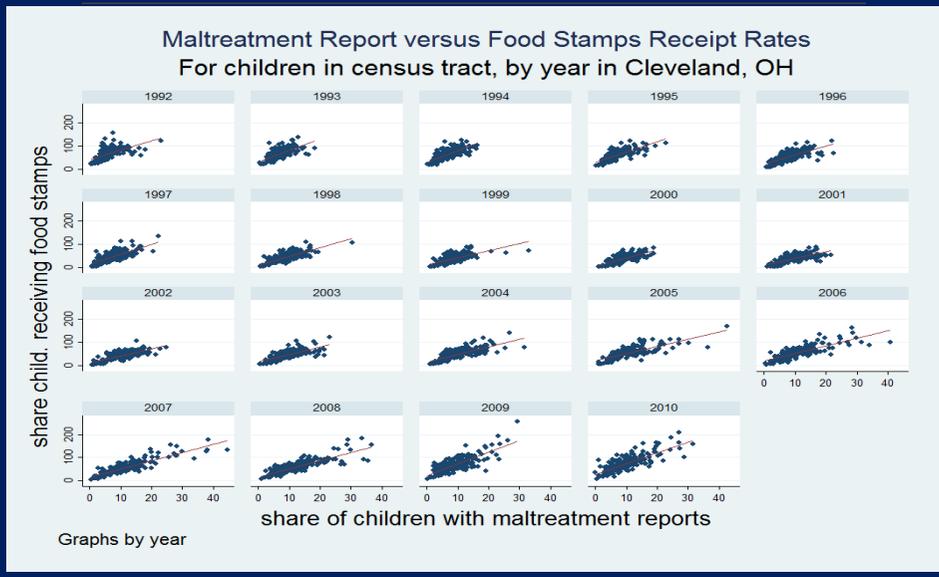
- Geo-coded administrative data to construct a 20-year panel of census tracts for:
 - Child maltreatment rates -investigations by the local authorities

 - Indicators of adverse neighborhood social conditions (**Child poverty rate** – food stamp receipt/child population, **Share of female headed households**, **Vacancy rate**, **Segregation**- Share of African American population, **Crime**- violent, property, drug offenses)

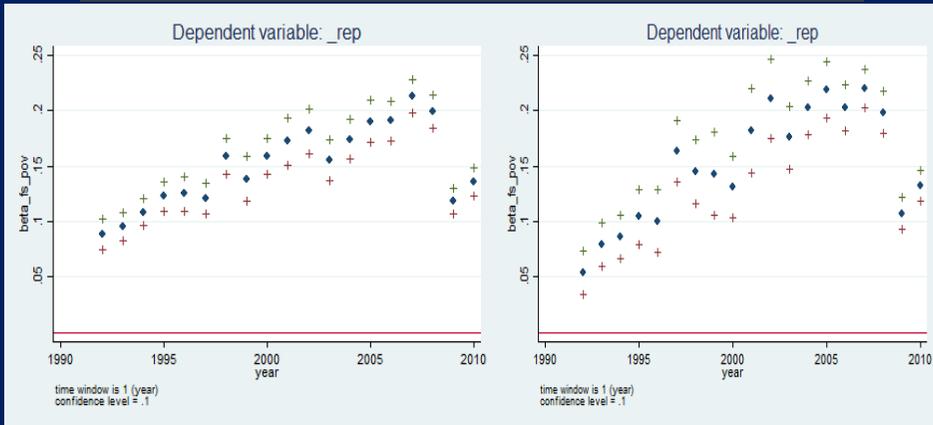
Temporal Changes in Child Maltreatment Report Rate



Temporal Changes in the Relationship Between Child Poverty and Child Maltreatment Report

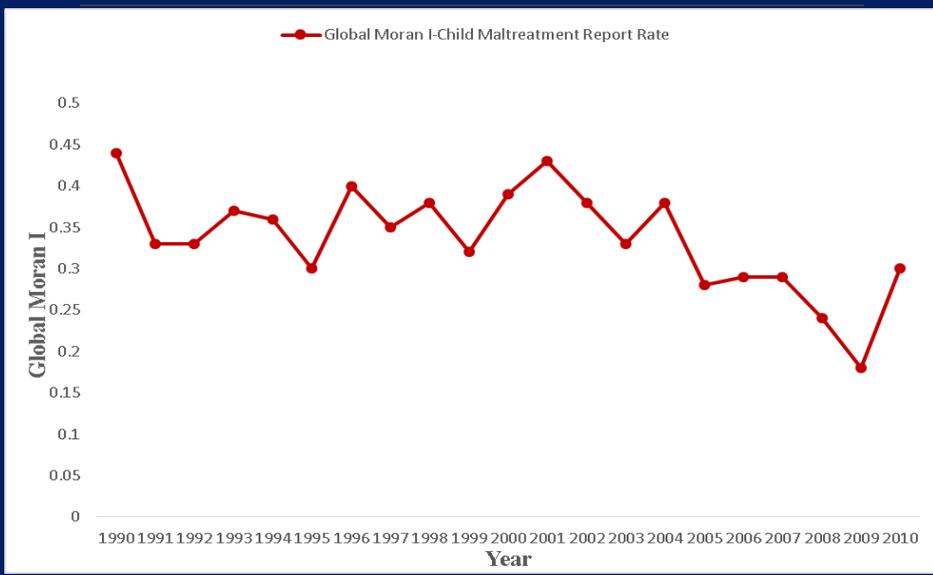


Temporal Changes in the Relationship Between Child Poverty and Child Maltreatment Report



Left: Coefficient estimate from OLS of maltreatment rate on poverty
 Right: Coefficient estimate from OLS of maltreatment rate on poverty accounting for crime, share of female headed-households, unemployment, share of African-American, vacancy rate

Temporal Changes in Spatial Autocorrelation



Ordinary Least Squares (OLS) and Fixed Effects Model Estimates

Variables (Rate/Percentage)	Model 1 OLS	Model 2 Fixed Effects	Model 3 Spatial Panel Fixed Effects
	Estimates (SE)	Estimates (SE)	Estimates (SE)
Poverty	0.09***(0.003)	0.12***(0.006)	0.12***(0.006)
Segregation (AA)	-0.03***(0.002)	0.02(0.11)	0.02(0.11)
Female Headed Families	0.04***(0.005)	0.02*(0.01)	0.02*(0.01)
Vacant Housing	0.11***(0.009)	-0.005(0.03)	-0.004(0.03)
Violent Crime	0.33***(0.08)	0.22*(0.08)	0.21*(0.08)
Drug Offenses	0.16***(0.05)	-0.05(0.07)	-0.05(0.07)
Property Crime	0.05(0.03)	0.10*(0.04)	0.10*(0.04)

***p<0.001, **p<0.01, *p<0.05, n=190

Conclusions

- Deterioration neighborhood structural conditions (e.g., rise in neighborhood poverty rate, violent crime rate, and percentage of female headed households) relates to subsequent increase in child maltreatment rate.
- Racial segregation (as estimated by percentage of African Americans) does not seem to have independent influence on changes in child maltreatment rate.
- Introduction of fixed effects may absorb association with structural housing deterioration (vacancy rate) but identifies effect of shorter term housing issues (property crime).

Implications

- Establishes relationship between neighborhood conditions on child maltreatment rate clear of relevant confounders.
- Illustrates the role of fixed effects models in removing the influence of unobserved covariates or omitted variables.
- Evidence suggests potential significance of policy changes at a structural level (e.g., policy to reduce neighborhood disadvantage) in reducing child maltreatment rate.

Limitations

- Causal influence of neighborhood social conditions at an individual level not established (i.e., cannot rule out ecological fallacy).
- Tract fixed effects may not capture changes in selection criteria of residents.
- Trade off between bias and efficiency (e.g., larger standard errors under fixed effects model).

Thank you!!!