Dividing Lines: Racial Segregation between Local Governments in U.S. Metropolitan Areas
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Segregation and Inequality

- **Motivation**: Racial segregation of cities is an important cause of inequality in outcomes.
- **Question**: Do local political boundaries in cities impact racial segregation and inequality?
- **Result**: More between-segregated metro areas have higher achievement gaps by race and lower intergenerational mobility.

![Share segregation between jurisdictions (φ)](image1)

Figure 1: Between-segregation and achievement gap between white and under-represented minority (URM, black and Latino) students.

Figure 2: Between-segregation and intergenerational mobility (Chetty et al. 2018).

Share of Total Segregation Explained by Between-Jurisdiction Segregation

- **One of the stiffness racial borders** is in the Detroit MI metro, the boundary between the City of Detroit and Grosse Pointe Park City
- **We can quantify this inequality by estimating a boundary regression discontinuity on block demographic composition**
- **To interpret the RD coefficient α, we can use the following formula:**

\[ f_{ijk} = D(1 - D) \beta \]

where \( D \) is the population share on one side of the discontinuity

- The rescaled RD coefficient squared is thus a measure of segregation

Do Local Government Boundaries Change?

- **YRS**: While relatively rare, residential areas change local education agency (LEA) jurisdictions when school district mergers, secessions or reunifications take place.
- **Between 2000-2010, AL MO, TX and TN saw substantial changes to LEA geographic jurisdictions**
- **Some prominent examples**:
  - 2006 Southside Independent School District (ISS) is shut down by the Texas Education Agency, merged with Dallas ISD
  - 2007 Independence Public School District in MO merges part of Kansas City Public Schools’ jurisdiction
  - 2009 Youngstown City School District partial merger with Shelby County Schools
  - 2011 urban ordinance in TN, revised in 2011
  - 2006 Saraland residents in AL voted to secede from Mobile County
  - 2009 Memphis City School District partial merger with Shelby County Schools
  - 2006 Wilmer-Hutchins Independent School District (ISD) is shuttered by the State of Texas

- We leverage these jurisdictional changes to study the impact of local boundaries on residential segregation

![Estimating Demographic Discontinuities at Local Government Boundaries](image2)

Empirical Framework

- **We are interested in the impact of school district changes associated with meaningful shifts in demographics**

\[ Y_{ijk} = \beta PctMinority + \delta_{ij} + \eta_i + \epsilon_{ijk} \]

- \( Y_{ijk} \) is the 2010 demographic outcome in block \( i \) located in LEA \( j \) and time period \( t \)
- \( \eta_i \) are block demographics in 1990 and 2000
- \( \beta \) is identified off of LEA boundaries

- **The treatment variable of interest is PctMinority, the intended percent minority of the 2010 LEA**
- **What the district’s composition would have been in 2010 if no demographic changes took place since 2000**
- **FE’s (\( \delta_{ij} \), \( \eta_i \)) ensure that \( \beta \) is identified off of LEA boundaries and within-school comparisons**

Impact of District Composition on Block Population by Race

![Effect of Boundary Changes on Sorting](image3)

Data

- **Using GIS software and crosswalks from NRHS, we construct a novel panel of census blocks for the years 1990, 2000, and 2010**
- **Data includes identifiers for the school district (LEA) that the block was part of in each time period**
- **Define a geographic partition of blocks in a given LEA**
- **There are a boundary (within 200 m) categorized separately based on which adjacent district they neighbor**
- **There are not a boundary - the “center” of the district**

Measuring Between-Segregation

- **Let T ∈ [0, 1] be indicator for minority from random draw**
- **Let T = 1 on a 1-n neighborhood selector**
- **Let \( T' \) be the share minority in jurisdiction \( j \)**
- **Define \( \phi \) as the share of between-segregation**

\[ \phi = \frac{\text{expected share minority in jurisdiction } j}{\text{share of minority in jurisdiction } j} \]

![Measuring Between-Segregation](image4)

- **We estimate boundary discontinuities in demographics across all adjacent local government pairs in US metropolitan areas (N > 20,000)**
- **Allows us to make statistical statements about the most racially unequal “dividing lines” in the country**
- **In some cases, particular dividing lines seem to be key drivers of segregation, akin to “racial borders,” raising important policy considerations**
- **The most unequal racial borders are also linked with local discontinuities in outcomes, such as student achievement by race**
- **More on this coming soon!**

![Measuring Between-Segregation](image5)