Historical Immigration and the Market for Schooling in American Cities

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Motivation

- Immigrants change local private and public goods through
  - tax revenue
  - skill mix
  - but also preferences
- Immigrants can affect market structure – schooling is an example:
  - native flight towards private schools (Boustan et al., 2023; Betts and Fairlie, 2003; Murray, 2016)
- What if immigrants have special school preferences?
  - private schooling in the US emerged from Catholic immigrants who thought public schools too Protestant
  - did Catholic school demand change long-term public-private schooling shares, quality, educational attainment?

Research Question

- **What was the impact of Catholic migration on public and private schooling in the US?**
  - focus on migration of Catholic southern Europeans from 1880-1930
  - Catholics landed in northeastern cities, often forming concentrated ethnic enclaves

- how might Catholics affect public schools?
  - shifting demand for private education – competitive pressures, improved teacher-pupil ratios
  - peer effects – immigrant children move into public schools
  - native flight – wealthy natives leave immigrant neighborhoods, leaving these sites poorer
  - teacher labor market – immigrant skill mix changes teacher labor supply

This project

> Leverage immigration shocks at neighborhood level to study effect of more or less Catholic migrants on schools and native pupils

- What is the impact of relatively more Catholic migrants in a neighborhood on:
    - public and private school openings, size
    - teacher quality (measured by socioeconomic status)
    - educational attainment of native children
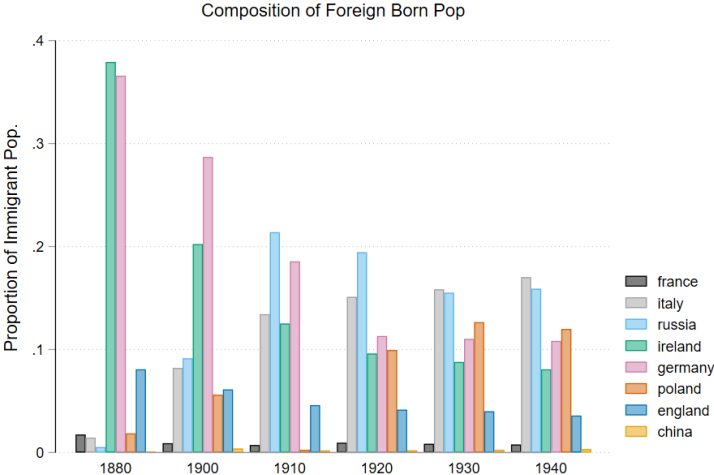   - long-term demand for private education

Contribution

- **Impacts of historic US migration on outcomes** (Abramitzky et al., 2023; Ager et al., 2023; Abramitzky and Boustan, 2017; Gagliarducci and Tabellini, 2022)
  - going more granular than county
  - looking at impact on local public goods
  - focusing on Catholics let's us measure outcomes relative to other immigrant-heavy places (Catholics vs. non-Catholics) (Gagliarducci and Tabellini, 2022)
- **Public-Private School Markets** (Urquiola, 2016; Bagde et al., 2022; Andrabi et al., 2023)
  - past work often instrumented using Catholic share (Cohen-Zada, 2009)
  - linking this literature to the immigration lit
  - looking at long term impact on opening and closing of public schools, teacher quality, impact on children over time
- **"Native flight"** (Boustan et al., 2023; Betts and Fairlie, 2003; Murray, 2016)
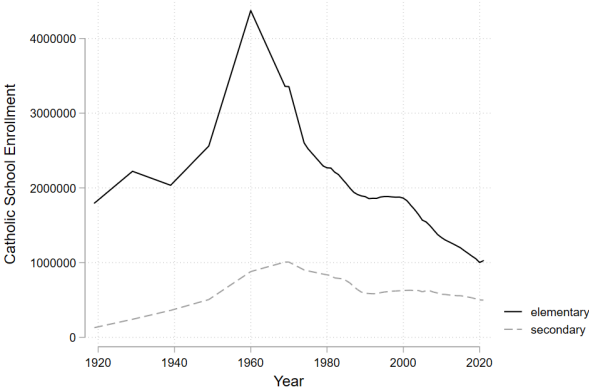
Background: Catholics and US Immigration

- wave of migration 1880-1920
  - 20 million+ immigrants arrive at Eastern ports, largely from Europe
  - Major sending countries: Catholic (Ireland, Italy, Poland) as well as Lutheran, Anglican (Germany, England)

- growth in private schooling demand
  - In response to the inflow, Catholic dioceses expand in the urban areas where immigrants settle
  - Catholic immigrants often preferred private Catholic education for children, which was offered cheaply through the neighborhood church.

- 1920s border closure restricts immigration from Southern and Eastern Europe

Immigrants by Country in Northeast Cities

Composition of Foreign Born Pop

Catholic School Enrollment over Time

Figure: Catholic School Enrollment over Time

Immigrant Characteristics in Northeast Cities

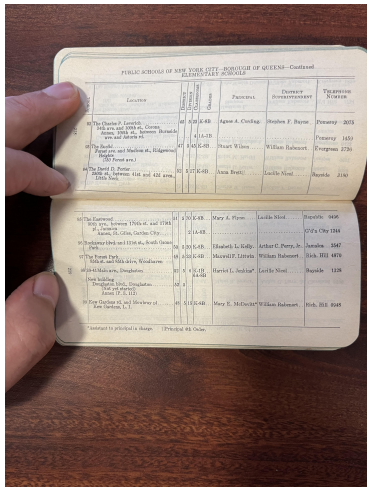Table: Immigrant Characteristics in 1880 (Northeast Cities)

	Literacy	Occscore	School	Age
Catholic	-0.144	0.176	-0.100	19.440
	[0.000]***	[0.022]***	[0.001]***	[0.023]***
Non-Catholic Imm	-0.009	1.303	-0.061	19.023
	[0.000]***	[0.020]***	[0.001]***	[0.021]***
Mean Dep.	0.934	14.784	0.227	25.254
Observations	2,836,016	2,836,016	2,374,399	3,797,192

Notes: All regressions have fixed effects for city and gender. Literacy and Occscore regressions keep only the sample aged 10+. School keeps only sample aged 0-25. Age is controlled for everywhere except the final column.
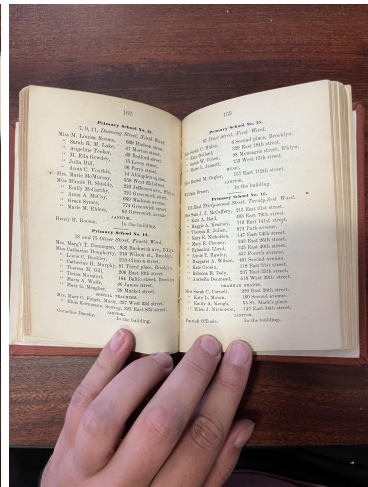
Data

- 100% Census files 1880-1940
  - CensusTree links to generate panel of native children exposed to Catholic neighborhoods (Buckles et al., 2023)

- Enumeration district maps
  - digitized by Urban Transition Historical GIS project for northern cities (NYC, Baltimore, Pittsburgh, Philadelphia, Boston, Chicago, etc) and linked them to the census files (Shertzer et al., 2016; Logan et al., 2011).

- School locations, characteristics:
  - Official Catholic Directory
  - Board of Education Directories
  - Board of Education Teacher directories

Directory Examples

(a) School Directory 1910

(b) Teacher Directory 1910
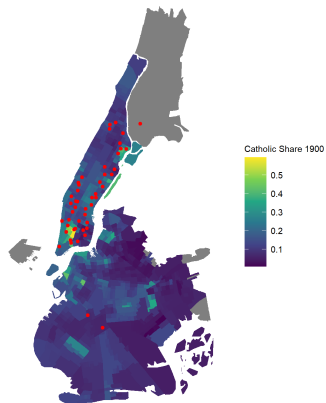
Catholic School Expansion over Time

Figure: Catholic Schools Pre 1900

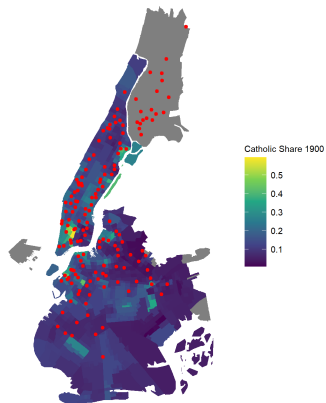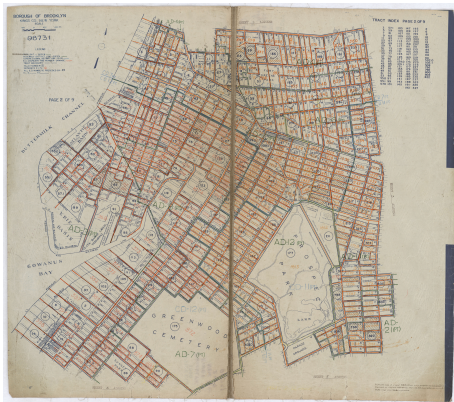# Catholic School Expansion over Time

Figure: Catholic Schools in 1920

Enumeration District Linking

ED maps are unique by census year – link over time by aggregating populations to the 1960 tract map, weighting all characteristics by share of ED in a given tract.
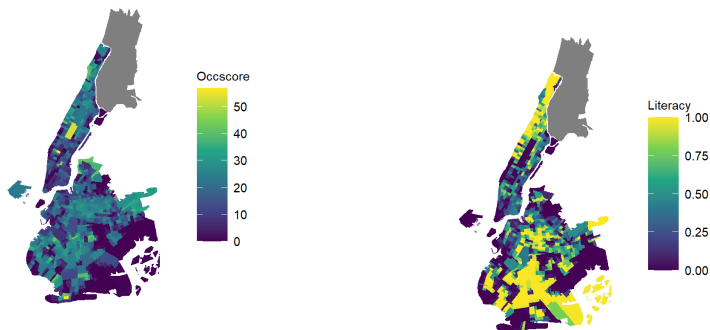
Persistence of Catholic Schooling

Table: 1960 Share of Public School Enrollment

	Public Share	Public Share	Public Share
Catholic Share 1900	-0.480		-0.323
	[0.056]***		[0.068]***
Catholic Share 1930		-0.319	
		[0.045]***	
1920 Catholic Quota Exposure			-0.002
			[0.001]***
Mean Dep.	0.697	0.695	0.697
Observations	2,537	3,062	2,533

Notes: All regressions have fixed effects for city. Outcomes are measured at the 1960 tract level.

Teacher Quality Measures

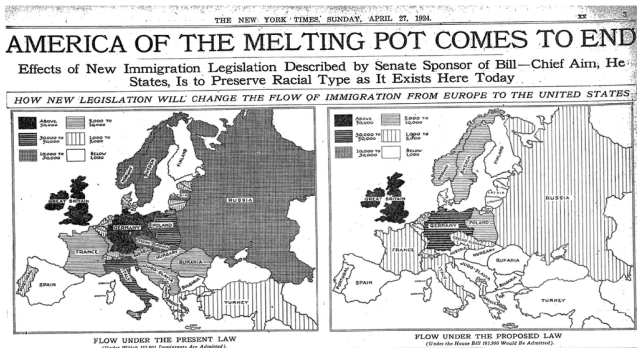Figure: Teacher Outcomes by 1960 Tract, NY

(a) Teacher Father's Occupation Score 1910

(b) Teacher Spouse's Literacy 1910

1920s Border Closure

Restricts migration by country to 2% of 1890 census, some countries hurt worse than others (Italy flow drops 90%, English 19%)

Figure: NYTimes Drawing on 1924 Quota

1920 Border Closure

- each origin country hit differently based on past migration pattern.
- Italy hit hard (growing pop, but low share in 1890) $\rightarrow$ missing Italian migrants in 1921
- each origin country now has missingness: (migrants that would have come - quota allowed)
- neighborhoods experience absolute drop in migrants, but in relatively different proportions based on composition
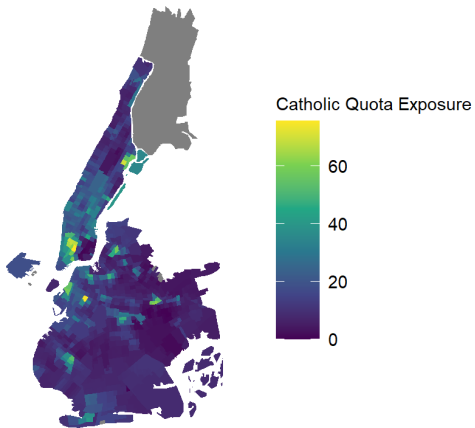- neighborhood exposure defined by pre-quota composition

1920 Border Closure

Following Ager et al. (2023), quota exposure at the tract level d

$$\text{Quota Exposure}_d = \frac{100}{P_{d,1910}} \sum_{n=1}^{N} max(\hat{M}_{n,1922-1930} - Q_{n,1922-1930}, 0)\frac{FB_{nd,1910}}{FB_{n,1910}} \qquad (1)$$

- $\hat{M}_{n,1922-1930}$ is a prediction of the inflow of migrants from each Catholic country without the quota.
- $Q_{n,1922-1930}$ is the total quota for a given Catholic country of origin n.
- $\frac{FB_{nd,1910}}{FB_{n,1910}}$ captures the fraction of immigrants from Catholic country n that are located in tract d.

Catholic Quota Exposure

Figure: Catholic Exposure by 1960 Tract

Relative Catholic Exposure

The quota hit catholic and non-catholic countries differentially. If the quota causes tract to lose more noncatholic than catholic immigrants, catholic share of goes up.

$$\text{QE Catholic Change}_d = QE_{\text{noncatholic}} - QE_{\text{catholic}} \qquad (2)$$

For a given tract level outcome y_{dt}, we can estimate:

$$y_{dt} = \alpha_d + \gamma_t + \beta(\text{QE Change}_d * \text{post}_t) + \Gamma(FB_{d,1910}) + \text{post}_t + \epsilon_{dt} \qquad (3)$$

Effects of Catholic Migrants on Tracts and Teachers

Relative Change in Catholics on Tract Characteristics

Table: 1920 Quota Impacts on Tract Characteristics

	Catholic Share	Non-Catholic Imm Share	US Native Share
Catholic Change * Post	0.104	-0.185	0.081
	[0.005]***	[0.006]***	[0.006]***
Mean Dep.	9.572	17.376	73.051
Observations	11,990	11,990	11,990

Notes: All regressions have fixed effects for city. Outcomes are measured at the 1960 tract level. Post is marked as 1 for years past 1920 (ie. 1930), and 0 for years prior (ie. 1900,1910,1920).

Relative Change in Catholics on Teacher Characteristics

Table: 1920 Quota Impacts on Teacher Characteristics

	Age	Spouse Occ	Father Lit	Catholic Share
Catholic Change * Post	0.006	-0.024	-0.000	0.065
	[0.008]	[0.007]***	[0.000]	[0.009]***
Mean Dep.	27.685	5.690	0.656	4.018
Observations	12,001	12,001	12,001	11,676

Notes: All regressions have fixed effects for city. Outcomes are measured at the 1960 tract level. Post is marked as 1 for years past 1920 (ie. 1930), and 0 for years prior (ie. 1900,1910,1920).

Effects of Catholic Migrants on Educational Attainment

Relative Catholic Exposure across Cohorts

- using linked census, we can capture a sample of children living in migrant neighborhoods at time of quota
- exposed cohort 0-10 at time of 1920 closure, compared to 11-20 at time of quota
- measure educational attainment in 1940 (ages 20-40)

For a given child in a tract y_{id}, we can estimate:

$$y_{id} = \alpha_d + \gamma_i age + \beta(\text{QE Change}_d * \text{Treat}_1 920) + \Gamma(FB_{d,1910}) + \text{Treat}_1 920 + \epsilon_{id}$$

(4)

Relative Change in Catholics on Child Education

Table: 1920 Quota Impacts on Child Attainment

	Ed Attainment	Ed Attainment	Ed Attainment
Treat * Non-Catholic Quota Exposure	0.006 [0.000]***		
Treat * Catholic Quota Exposure		-0.005 [0.001]***	
Treat * Relative Catholic Change			0.005 [0.000]***
Mean Dep.	13.631	13.631	13.631
Observations	1,359,701	1,359,701	1,359,701

Notes: All regressions have fixed effects for city.

Relative Change in Catholics on Child Education

Table: 1920 Quota Impacts on Child Attainment

	Ed Attainment	Ed Attainment	Ed Attainment
1920 Non-Catholic Quota Exposure		0.022 [0.000]***	
1920 Catholic Quota Exposure	-0.031 [0.000]***		
Relative Catholic Change			0.013 [0.000]***
Mean Dep.	13.588	13.588	13.588
Observations	1,398,814	1,398,814	1,398,814

Notes: All regressions have fixed effects for city.

Next Steps

- gather school level outcomes for public, private schools
- link teachers to schools
- study expansion of schooling over the time period, panel of public-private schooling shares

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