

Immigration and Education

Early Insights from the NYC Buslift

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Motivating Ideas

- Immigration remains a pivotal issue for American voters (e.g. AP-NORC Dec 2023)
 - Local, salient episodes can shape broad beliefs about immigration
- Ongoing inflows of many young children
 - Increasing share of families with young children – 41% of recent border encounters (Pew Research Center 2024)
- Education matters
 - Informs labor market outcomes and fiscal impacts (Orrenius 2017, NAS 2016 Ch 9)
 - Tremendous growth in immigrant children in schools, roughly 25% today

Preview of Paper

- Question: how does immigration affect public education ?
- This Paper: Focus on public elementary schools in NYC. Outcomes include enrollments, test-scores, resources per student
- Methodology: leverage a natural experiment – the Buslift to NYC
 - Diff-in-diffs design to compare public schools with many shelters in their catchment area/zone to schools with few/no shelters in zone
- Findings:
 - Buslift induced sizable and immediate increases in migrant enrollment (5%-40% effect sizes)
 - Near-term impacts on other outcomes limited: domestic enrollment, test scores, funds per student/ pupil-teacher ratio
 - Progressive school funding formula may provide buffer in the near-term

Literature and Contribution

- Overall immigration affects marginal costs & marginal benefits of schooling ([Betts, 1998](#); [Betts and Fairlie, 2003](#); [Cascio and Lewis, 2012](#); [McHenry, 2015](#); [Hunt, 2017](#))
- Effect of immigrant students/peers within schools is mixed ([Cortes, 2006](#); [Conger, 2015](#); [Diette and Uwaifo Oyelere, 2017](#); [Figlio and Özek, 2019](#); [Figlio et al., 2023](#); [Ballis, 2023](#))
- Immigration can alter resources per student
 - Importance of school finance systems & reforms ([Hoxby, 2001](#); [Fernandez and Rogerson, 2003](#); [Jackson, 2016](#); [Hyman, 2017](#))
 - General equilibrium responses ([Coen-Pirani, 2011](#); [Cabrales et al., 2018](#))
 - Credible empirical work is needed ([Schwartz and Gershberg, 2000](#); [Schwartz and Stiefel, 2004](#))

Conceptual Framework

- Focusing on school resources, where data is rich in detail:
 - May dilute due to “crowding” and increased costs (e.g. remedial services)
 - However, school finance reforms since the 1970s have emphasized *equalizations*
 - Progressive funding may buffer near-term declines, ceteris paribus – implies shifting of burden (e.g. other public goods or services, tax base)
 - G.E. effects beyond, near-term include changes in the tax price of education and/or property values, Tiebout sorting, flight to private schools, voter support for public education, etc.

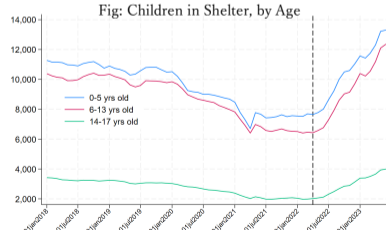
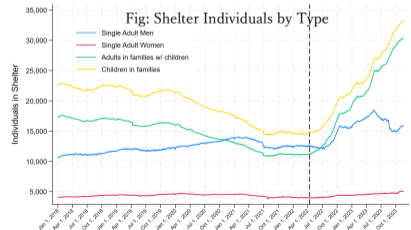
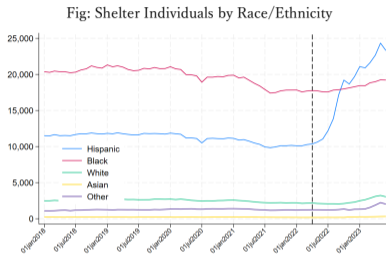
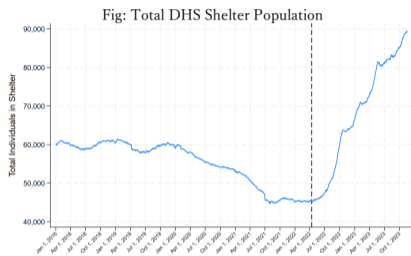
Plan for Today

- 1 The Buslift
- 2 Methodology
- 3 Data
- 4 Results
- 5 Ongoing work & Conclusion

The Buslift to NYC

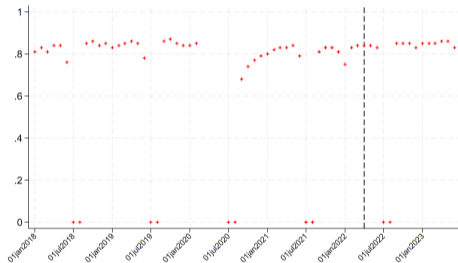
- Increase in asylum-seekers begins in April 2022 – induced by the end of Title 42 and surging volume of unauthorized crossings along the U.S.-Mexico border
- Texas enacts “Operation Lone Star” to bus migrants to select cities (i.e. D.C., NYC, Denver, Philadelphia, Chicago, and Los Angeles)
- Among destination cities, NYC has received the largest inflow of migrants totalling over 175,000 to date
- Right to Shelter Law provided migrants with housing within the NYC Homeless Shelter System

Characterizing Migrants in Shelters



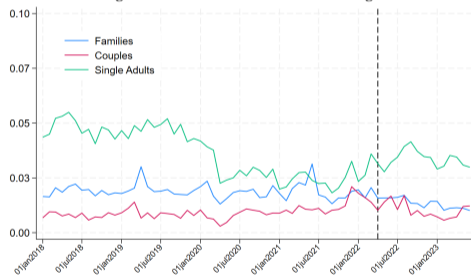
Characterizing Migrants in Shelters

Fig: DHS School Attendance



Note: Data reflects percentage of days attended by all children in the shelter system with at least one recorded day of attendance at school during the month

Fig: DHS Exits into Permanent Housing



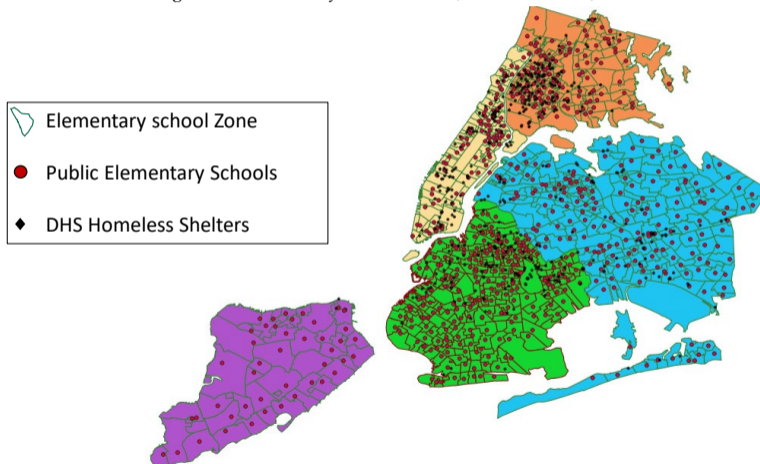
Note: Data share of individuals/families placed into permanent housing where the individual/family remains outside the shelter system for at least 30 days.

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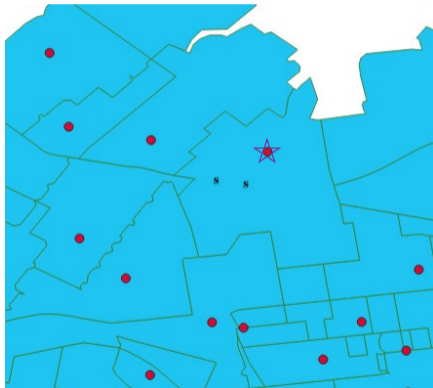
Visualizing the Design

Fig: NYC Elementary School Zones, Public Schools, and Homeless Shelters



Visualizing the Design

Fig: Northern Queens



☆ Treatment Schools, with shelters in zone

Fig: Lower Manhattan



Difference-in-Differences Design

$$y_{sdt} = \alpha + \sum_{\tau \neq 2021} \beta_{\tau} (\text{HighShelter}_s \times \mathbf{1}[t = \tau]) + \gamma_s + \gamma_t + \gamma_{dt} + \varepsilon_{sdt}$$

- y represents outcome of school s , in community district d , at time t
- School FEs (γ_s) and Time-period indicators (γ_t)
- Community district by time-period fixed effects (γ_{dt})
- HighShelter_s assigns treatment status – threshold based on number of shelters within zone ($\text{HighShelter}_s = 1$ if shelters > 3)
- Examine cond'l parallel trends via event study

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Data Sources

- Locations of Schools and Shelters (geocoded to lat/lon)
 - DOE 2021 Kindergarten Admissions Guide (*NYC Open Data*)
 - Shelter Repair Scorecard February 2022 (*Department of Homeless Services*)
- School Outcomes Data (up to 1 year post):
 - Enrollments by race (*Demographic Snapshots Fall 2017 - Fall 2022*)
 - Students in Temporary Housing (*Local Law 73, April 2018-April 2023*)
 - Math/ELA Test Scores¹ (*School Files March 2015-March 2023*)
 - Pupil-Teacher Ratio (*Class Size Reports February 2018 - February 2024*)
 - *School Funds per Student (Funding Transparency Reports 2017/18 - 2022/23)*
- Resulting panel dataset of 645 traditional zoned public elementary schools from 2017-2023

¹No exams during pandemic years 2020 and 2021

Sample Descriptives

Table: Summary Statistics of Public Elementary Schools, 2019

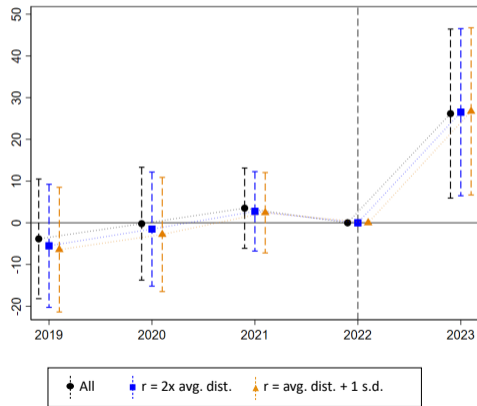
	Low-Shelter Zone		High-Shelter Zone	
	Mean	SD	Mean	SD
Enrollment	626.8	300.8	417.3	149.6
Hispanic	41%	26%	48%	23%
White	17%	22%	7%	14%
Black	24%	26%	37%	25%
Asian	16%	20%	5%	10%
ELL	15%	11%	10%	8%
STH	14%	10%	22%	9%
Pupil-Teacher Ratio	13.4	2.4	11.5	2.1
Funds per Student	\$ 24,473	\$ 4,134	\$ 26,598	\$ 4,132
Schools	585		60	

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Migrant Enrollment

Figure: Event Study Estimates for STH Enrollment



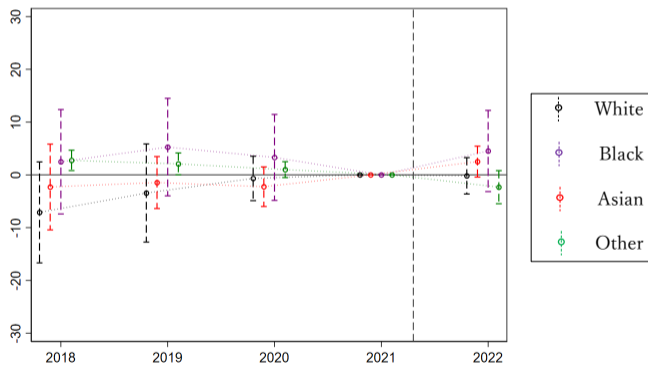
First-Stage Magnitudes

Table: First Stage Effects

	(1) Without DistrictXYear FEs	(2) Include DistrictXYear FEs	(3) Only Zones with Shelters	(4) Distance Refinement 1	(5) Distance Refinement 2
<i>A: Students in Temporary Housing:</i>					
High-Shelter X Post22	21.922* (11.671)	26.399*** (9.785)	29.340*** (10.356)	27.678*** (10.121)	28.525*** (10.188)
Mean Y	66.96	66.96	83.20	79.27	
<i>B: English Language Learners:</i>					
High-Shelter X Post22	7.37 (5.61)	14.07*** (4.88)	11.61* (5.90)	17.82*** (6.04)	17.40*** (6.31)
Mean Y	101.03	101.03	92.79	99.13	95.79
<i>C: Hispanics:</i>					
High-Shelter X Post22	8.71 (8.32)	13.17** (6.61)	8.46 (7.19)	14.01** (6.94)	13.63* (7.16)
Mean Y	232.80	232.80	256.31	262.28	260.83
Number of Schools	645	645	194	352	313
Obs.	3,225	3,225	970	1,760	1,565

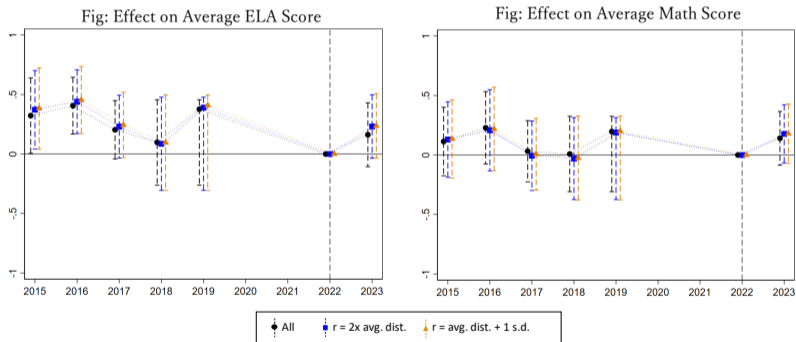
Enrollments of Domestic Students

Figure: Event Study Estimates for Enrollment of Domestic Students



Test Scores

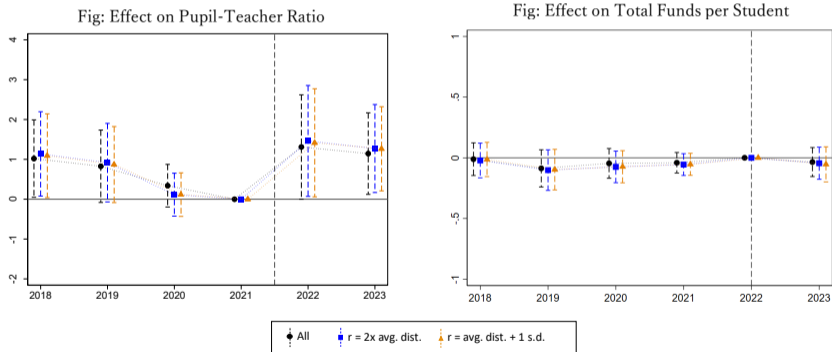
Figure: Event Study Estimates for ELA and Math Statewide Test Scores



*Test score data missing about 1/6 of schools

Resources per Student

Figure: Event Study Estimates for School Resources per Student



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Understanding NYC School Funding

- NYC uses a complex formula. A simplified version is:

$$R_s = F + N_s PC + \sum_i \omega_i PC_i N_i \quad (1)$$

- F is a foundation allotment (\$225,000)
- PC is per-capita allotments based on number of students N_s (\$4084 in 2019)
- PC_i is per-capita allotments for the number of students with need type i , N_i (\$1,633 for ELL in 2019)
 - Need types are not mutually exclusive, so that $N_i \leq N_s$ and $\sum_i N_i \geq N_s$
- ω_i are weights for need type i (0.40 for ELL in 2019)

Effect of Immigration on Funds per Students

- Suppose immigration only increases the number of students with need-type i . The change in funds per student ($r_s = \frac{R_s}{N_s}$) with respect to immigrants, holding all else constant, is:

$$\frac{\partial r_s}{\partial N_{is}} = -\frac{F}{N_s^2} + \omega_{is}PC_i \left(\frac{N_s - N_{is}}{N_s^2} \right) - \sum_{j \neq i} \omega_j PC_j \frac{N_{js}}{N_s^2}$$

- The break-even funds per student occurs when:

$$\omega_{is}PC_i = \frac{F}{N_s - N_{is}} + \sum_{j \neq i} \omega_j PC_j \frac{N_{js}}{N_s - N_{is}}$$

- A simple back-of-envelope calculation for a school that only has need-based students in the ELL allotments (15%) yields:

$$\omega_{is}PC_i = \$653 > \frac{F}{N_s - N_{is}} = \$425$$

Ongoing Work

- Analysis of detailed school-level budget and expenditures data
- Incorporate more recent outcomes to assess dynamics outside of the very near-term, that may include Tiebout sorting, flight to private school, etc
- Extend analysis to middle schools and high schools, where there is larger scope for mobility
- Account for more recent openings of additional shelters and large aid facilities (HERRCs)

Conclusion

- We assess near term educational impacts of the Buslift to NYC
- Use diff-in-diffs design based on proximity of schools to pre-existing homeless shelters where migrant families were placed
- Sizable inflow of immigrant students, but very muted near-term effects on enrollment of others, test scores, resources per student Progressive school funding system in NYC may buffer near-term reductions in resources per student, partially or entirely explaining limited responses in outcomes

Thank You!

Please contact me at kshih@qc.cuny.edu

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