Introduction

This paper estimates the effects of school choice provision on housing prices. We use the introduction and further modification of the Chicago elementary magnet schools proximity lottery to identify causality.

Magnet Schools

- High performance and high demand.
- Created in the early 1980 to address racial segregation.
- Two key reforms:

  - 1980-1997
    - Citywide lottery
    - Minority quotas
    - Siblings (up to 45%)
    - Proximity lottery* (30% of remaining seats)
  - 1997 Reform
    - Proximity lottery* (40% of remaining seats)
    - Citywide lottery
    - Minority quotas (remaining seats)
  - 2009 Reform
    - Proximity lottery* (40% of remaining seats)
    - Citywide lottery 4 tier system (remaining seats)

* Proximity lottery: Preferential lottery for applicants living in a 1.5 miles radius around elementary magnet schools.

- The introduction and further modification of the proximity lottery generates incentives to live close to magnet schools. This should have an effect on housing.
- We should expect a housing price discontinuity at 1.5 miles from each magnet elementary school.

Previous literature

- School boundaries discontinuity (Black, 1999; Gibbons et al., 2009)
- School openings (Fack and Grenet, 2000; Schwartz et al., 2014)
- School Redistricting (Bogart & Cromwell, 2000)

Contribution

- Uses a natural experiment to identify causal effects.
- Does not rely on school openings that are potentially endogenous.
- First paper of its kind for the Chicago area.
- Public policy implications for the design of admission policies.

Identification Strategy

Treatment

Houses within the 1.5 miles radius around at least one eligible magnet schools.

Control

Houses at 1.5 to 3 miles to the closest eligible magnet schools.

Dif-in-dif Model

\[ Y_{it} = \gamma_1 PL_h + \gamma_2 Re_{fh} + \gamma_3 PL_h \times Re_{fh} + \beta_1 X_{it} + \mu_t + \rho_i + u_{it} \]

- Exogenous variables include: house attributes (size, number of bathrooms, age, garage and fireplace) and distance to city amenities (hospitals, metro stations and parks).
- All regression include year and elementary school district fixed effects.

Preliminary Results

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<tbody>
<tr>
<td>(\leq 1.5) miles</td>
<td>0.030</td>
<td>0.050</td>
<td>0.006</td>
<td>0.095</td>
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<tr>
<td>Post 1997</td>
<td>(0.053)</td>
<td>(0.053)</td>
<td>(0.053)*</td>
<td>(0.051)*</td>
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<tr>
<td>Post 2009</td>
<td>-0.077</td>
<td>0.005</td>
<td>-0.037</td>
<td>-0.016</td>
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<tr>
<td>(0.035)**</td>
<td>(0.035)</td>
<td>(0.042)*</td>
<td>(0.042)</td>
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<tr>
<td>Dit-in-dif (1997)</td>
<td>0.091</td>
<td>0.036</td>
<td>0.077</td>
<td>0.016</td>
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<tr>
<td>(0.037)**</td>
<td>(0.036)</td>
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<tr>
<td>Post 2009</td>
<td>-0.351</td>
<td>0.507</td>
<td>0.017***</td>
<td>0.017***</td>
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<td>Dit-in-dif (2009)</td>
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<td>Observations</td>
<td>86057</td>
<td>208210</td>
<td>380553</td>
<td>208553</td>
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* p < 0.1, ** p < 0.05, *** p < 0.01
Note: Standard errors in parentheses. All regressions include year and elementary school fixed effects and control for house attributes (size, number of bathrooms, age, garage and fireplace) and distance to city amenities (hospitals, metro stations and parks).

Conclusions

- Proximity lottery increases eligible housing prices in 9% during the first 5 years.
- Effects seem to vanish over time until the 2009 reform is introduced.
- When estimating the effect of both reforms, the later has much larger effects on prices.
- Extensions:
  - Spatial Lag of Housing Prices
  - Inclusion of other outcomes such as teardowns

Data

Housing

- 1997-2012 Sale prices and house attributes (269,553 obs.)
  - Sources: Chicago Assessors Office (DataQuick).

Schools

- 22 elementary magnet schools that existed before 1997 and have proximity lottery.
- School ranking.
- Neighborhood School districts.
  - Sources: Chicago Public Schools and City of Chicago Open Data Portal.

Conclusion Diagram