

Are Historic Districts A Backdoor for Segregation?

Yes and No

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Historic District and Segregation

- The National Historic Preservation Act (NHPA) was established in 1966 and remains in existence
- Many state and local governments have analogous preservation acts, some of which preceded the federal counterpart
- An unintended consequence of such a designation may be residential segregation – an endemic characteristic of U.S. cities
- Historic districts may therefore exacerbate residential segregation as both mechanisms limit low-income in-migration

Research Question

- Are white buyers more likely to buy a historic home?
- Are white buyers more likely to buy a historic home in a historic district with official designation?

Literature and Contributions

- McCabe and Ellen (2016): no evidence of increased segregation, while relying on aggregate measures of racial sorting
- Two alternative measures of segregation: An index of dissimilarity - the evenness of which two groups are distributed across subunits of a given geographic area & An index of isolation - the degree of exposure between groups
- The first economics paper on historic district and segregation
- Improved identification than the McCabe and Ellen (2016) paper: transaction level & machine learning methods

Data

- Denver County Assessor's Office
 - Real estate transactions, 01/01/1990 - 06/30/2016
 - Final sample: 174,779 single-family home transactions after removing about 1% of outlying observations
- Denver Open Data Catalog
 - GIS shape file containing all the Denver local historic districts (DLPC ones), with their name, id number, date of designation, and geographical location
- NRHP historic districts in Denver
 - NPGallery Digital Asset Management System of National Park Service, History Colorado
 - Google Earth Pro to verify the inter-temporal changes, June 1993 - May 2018

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Working Paper Link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3733105

Predicting Race by Names

- Direct/explicit name matching: Bertrand and Mullainathan (2004)
- Name tokens & Machine learning
- Name strings & Machine learning
- “ethnicolr” Python package by Sood and Laohaprapanon (2018)

Logit Model Specification

- Home i in census tract c transacted in year t , the probability of buyer being from a specific racial group $Pr(Race_{ict} = 1 | H_{ict}, X_{it}, \mu_c, \delta_t, \rho_a)$ is estimated as:

$$\frac{e^{\beta H_{ict} + \phi X_{it} + \mu_c + \delta_t + \rho_a}}{1 + e^{\beta H_{ict} + \phi X_{it} + \mu_c + \delta_t + \rho_a}}$$

- For the transaction of home i in census tract c transacted in year t , the probability of the racial flow of the buyer to seller

$Pr(Flow_{ict} = 1 | H_{ict}, X_{it}, \mu_c, \delta_t, \rho_a)$ is estimated as:

$$\frac{e^{\beta H_{ict} + \phi X_{it} + \mu_c + \delta_t + \rho_a}}{1 + e^{\beta H_{ict} + \phi X_{it} + \mu_c + \delta_t + \rho_a}}$$

Summary Statistics

Statistic	Mean	St. Dev.	Min	Max
Sale Price	269,748	248,328	50,000	5,700,000
Home Size (log ft^2)	1,500	781.462	226	12,433
Bedrooms	2.778	0.812	1	9
Full Bathrooms	1.993	0.882	1	7
Half Bathrooms	0.321	0.503	0	4
Year Sold	2004	6.622	1990	2016
Year Built	1951	34.330	1874	2015
Distance to CBD (km)	8.542	5.139	1.022	22.990
Local Historic District	0.030	0.171	0	1
Local Historic Heritage	0.041	0.199	0	1
National Historic District	0.021	0.145	0	1
National Historic Heritage	0.024	0.154	0	1

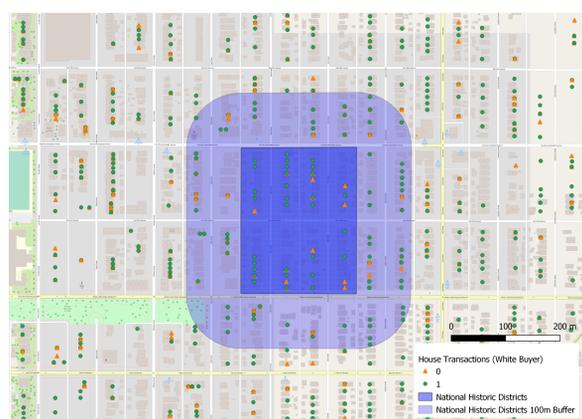
N=174,779

Predicted Buyers/Sellers Race

Statistic	Mean	St. Dev.	Min	Max
Buyer White	0.770	0.421	0	1
Buyer Black	0.043	0.202	0	1
Buyer Asian	0.028	0.166	0	1
Buyer Hispanic	0.159	0.366	0	1
Seller White	0.810	0.392	0	1
Seller Black	0.058	0.235	0	1
Seller Asian	0.038	0.192	0	1
Seller Hispanic	0.093	0.291	0	1

N=174,779

An Example Map



Buyers Race Results

Mean Probability	White Buyer Local Historic Dist.	White Buyer National Historic Dist.
Heritage = 0 &		
Heritage × Designation = 0	0.7692	0.7691
Heritage = 1 &		
Heritage × Designation = 0	0.8029	0.8256
Heritage = 1 &		
Heritage × Designation = 1	0.8042	0.8231

The heritage effect for both districts are at the 5% significance level.

Falsification/Robustness Tests

- Florida Voter Full Names vs. Census Last Name Race Prediction
- Probit Models & Linear Probability Models
- Placebo Tests: 1000m Southerly, Northerly, Easterly, and Westerly

Placebo Test Example



Note: An example placebo test - Southerly 1000m for local historic districts.

Conclusions and Implications

- Are Historic Districts A Backdoor for Segregation?
- Yes
 - Home buyers are more likely to be White within historic districts
 - Similarly, when examining seller-to-buyer housing transactions, we find that most transactions flow from White sellers to White buyers
- No
 - The official designation has no effect on this probability
- Thus, while historic districts tend to be more segregated than their surrounding areas, the legal restrictions and housing premium that come with historic designations do not seem to amplify this existing problem

References

- [1] Bertrand, M. and S. Mullainathan (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review* 94 (4), 991–1013.
- [2] McCabe, B. J. and I. G. Ellen (2016). Does preservation accelerate neighborhood change? Examining the impact of historic preservation in New York City. *Journal of the American Planning Association* 82 (2), 134–146.
- [3] Sood, G. and S. Laohaprapanon (2018). Predicting race and ethnicity from the sequence of characters in a name. arXiv preprint arXiv:1805.02109.