

Rental deserts, Zoning, and Segregation

Evidence from the 100 largest metro areas

Whitney Airgood-Obrycki, PhD

Magda Maaoui, PhD

Sophia Wedeen

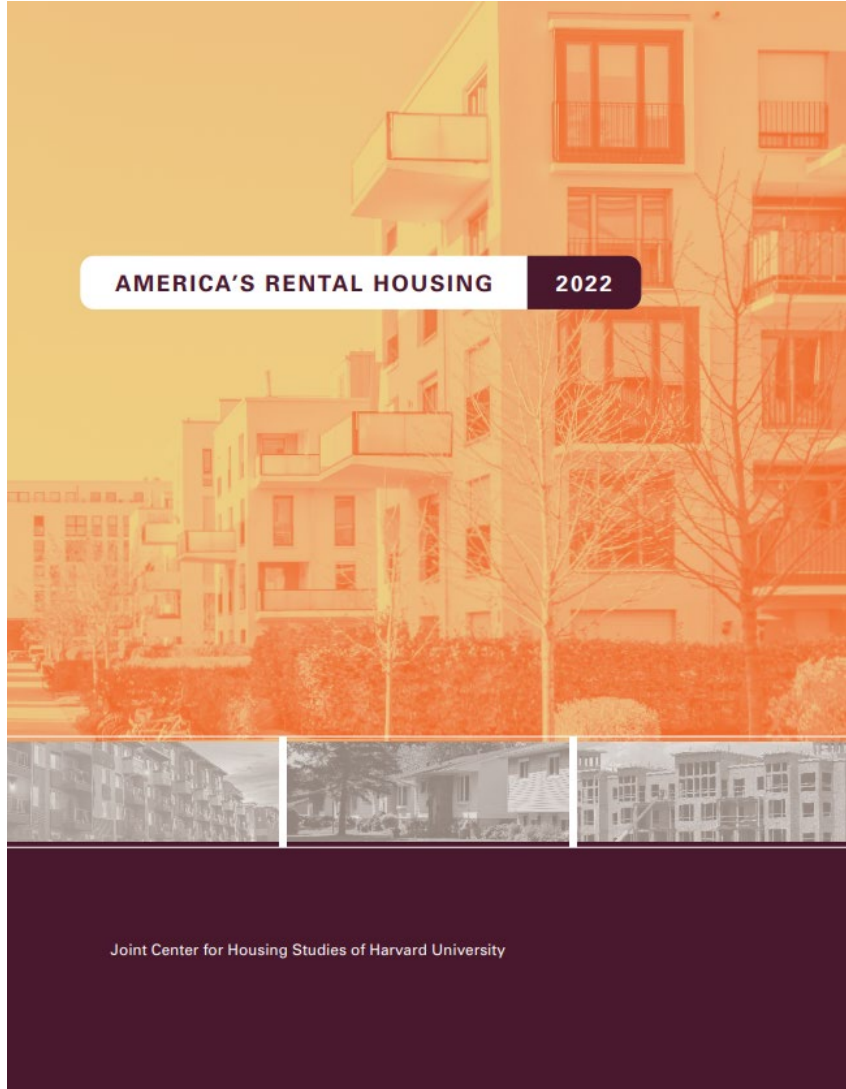
What are rental deserts?

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"Invisible House" in Joshua Tree National Park, CA, 2022 - Engel & Volkers Santa Monica / Petr Masek

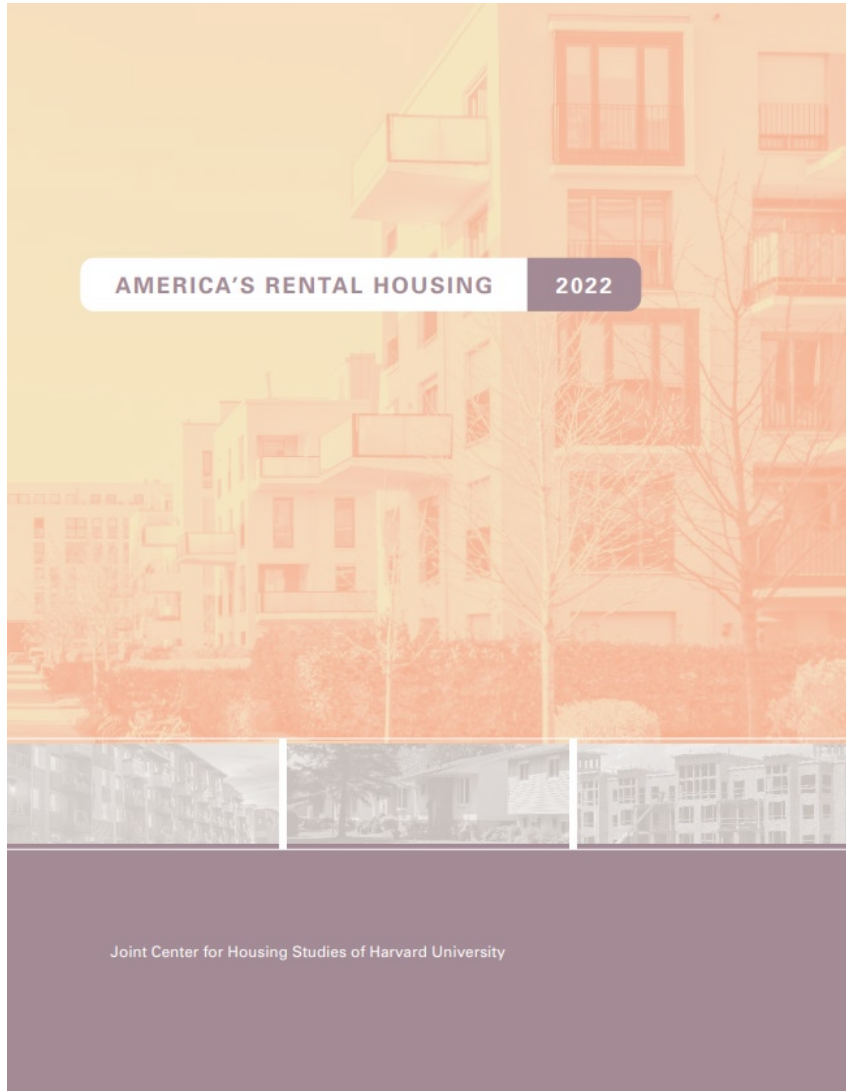
What are rental deserts?



RENTAL DESERTS PERPETUATE SOCIOECONOMIC AND RACIAL SEGREGATION

Thursday, August 4, 2022 | Whitney Airgood-Obrycki, Sophia Wedeen

What are rental deserts?



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RENTAL DESERTS PERPETUATE SOCIOECONOMIC AND RACIAL SEGREGATION

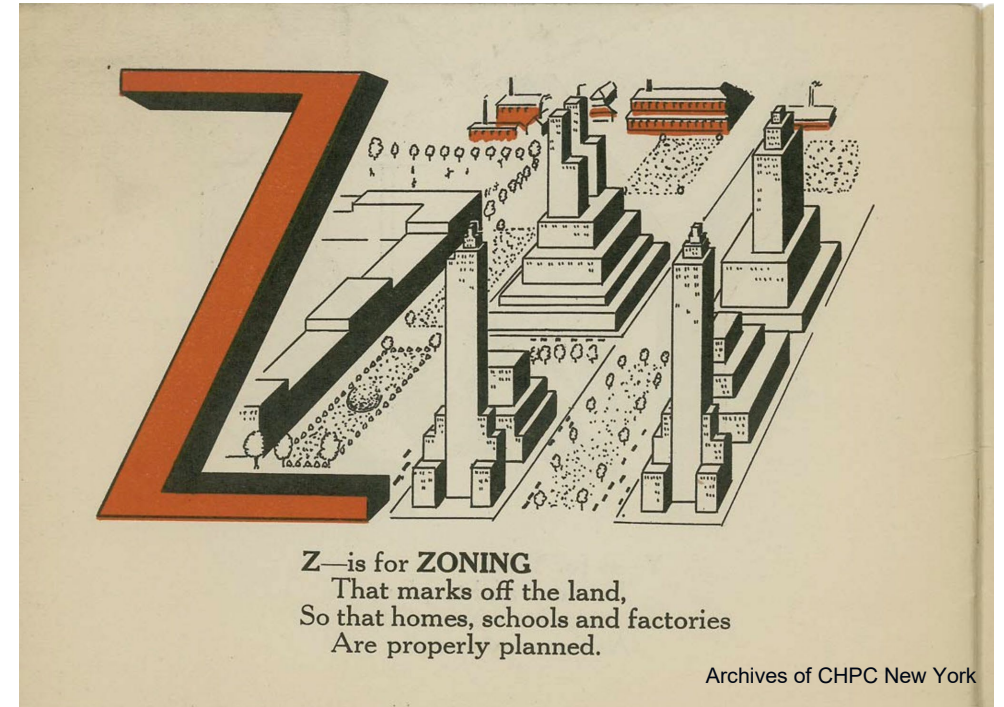
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- **Rental deserts (35% of tracts):**
less than **20%** housing units occupied by a renter or vacant for rent
- **Extreme rental deserts (14% of tracts):**
less than **10%** housing units occupied by a renter or vacant for rent

Hypothesis: there is a link between the geography of rental deserts, restrictive zoning, and neighborhood segregation levels



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Research Questions



1. **What share of neighborhoods are rental deserts, and how do the characteristics of these neighborhoods differ from mixed-tenure and high-rental neighborhoods?**



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2. **How does restrictive zoning contribute to the limited geography of rental options?**



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2. **How does restrictive zoning contribute to the limited geography of rental options?**



3. **How are rental deserts distributed spatially in the largest 100 metropolitan areas?**



Research Questions



1. **What share of neighborhoods are rental deserts, and how do the characteristics of these neighborhoods differ from mixed-tenure and high-rental neighborhoods?**



2. **How does restrictive zoning contribute to the limited geography of rental options?**



3. **How are rental deserts distributed spatially in the largest 100 metropolitan areas?**



4. **What is the relationship between the spatial distribution of rental deserts and patterns of racial and socioeconomic segregation?**

Outline



Step 1

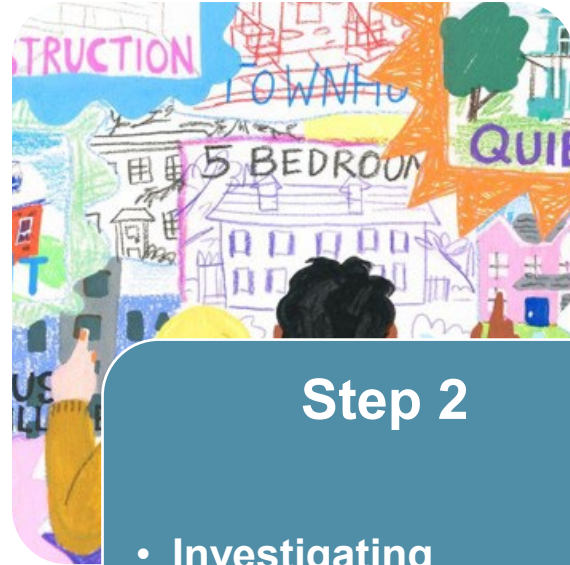
- Defining and mapping rental deserts

Outline



Step 1

- Defining and mapping rental deserts



Step 2

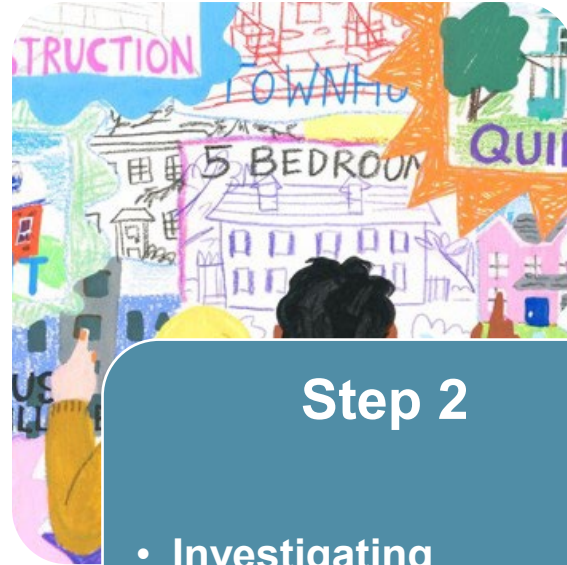
- Investigating associations with restrictive zoning, and resulting variations in the spatial distribution of rental deserts

Outline



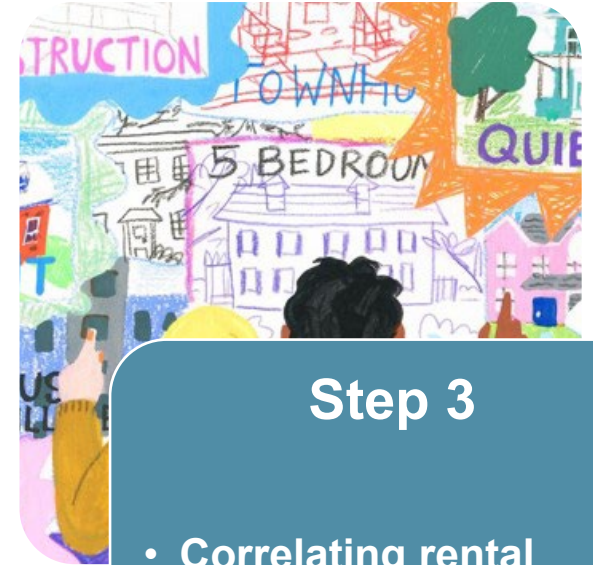
Step 1

- Defining and mapping rental deserts



Step 2

- Investigating associations with restrictive zoning, and resulting variations in the spatial distribution of rental deserts



Step 3

- Correlating rental housing segregation with socioeconomic and racial segregation

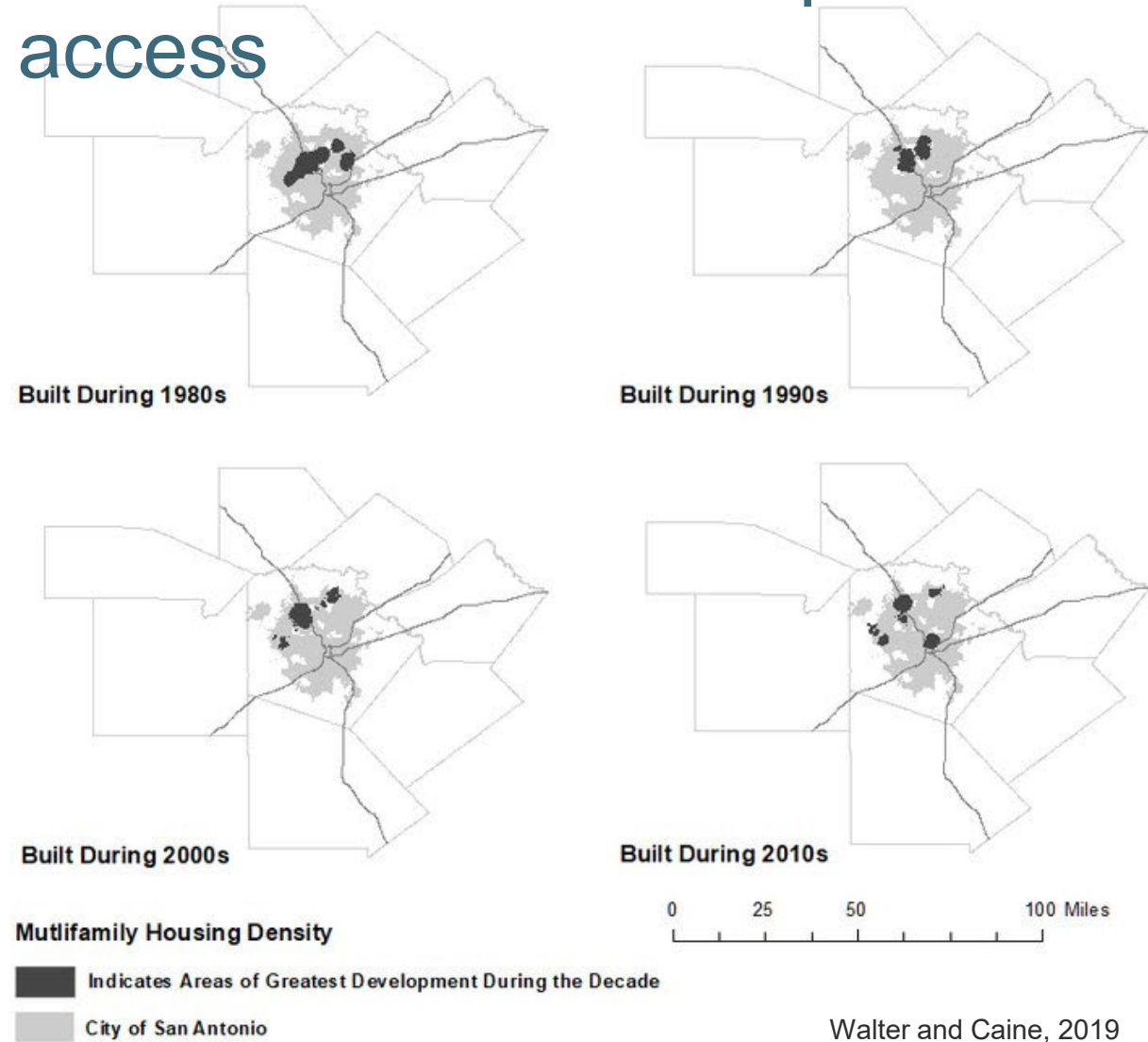
Context: places that say no to rental housing and do not meet a growing demand

- Restrictive communities have long blocked the construction of multifamily housing, the provision of affordable rental options, and housing for communities of color (Mickloz and Warner, 2014)
- Suburbs have largely been shaped by a traditional separation of uses and a preference for single-family housing, but demographics and needs are changing (Maaoui, 2018)



No study to date provides a national overview of the impact of zoning barriers to *rental housing* access

- Studies on location, clustering, and features of multifamily housing are specific to a few cities or neighborhoods
 - Chakraborty et al., 2009
 - Atkinson-Palombo, 2010
 - Caine et al., 2017
 - Walter and Caine, 2019



Walter and Caine, 2019

And yet there are strong links between exclusionary zoning and the lack of housing options

- Cities with least new construction have most restrictive land use (Godinez-Puig et al., 2023; Pendall, 2000; Schuetz, 2009)
- Zoning accounts for 40.6% of the cost of multifamily development (National Multifamily Housing Council, 2022)
- Slow + steady reform is changing that, allowing for more housing typologies and increased social mix (Monkkonen, Manville & Friedman, 2019; Maaoui, 2021)

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A geography of opportunity and distress

- Almost 70% of low-income households live in rental housing
- Restrictiveness is linked with higher levels of income and racial segregation, particularly of affluent households (Lens and Monkkonen, 2016; Owens, 2019)
- The lack of affordable housing in amenity-rich neighborhoods impacts household trajectories, including health, school, or job access (Chetty et al., 2016; Sportiche, 2023)

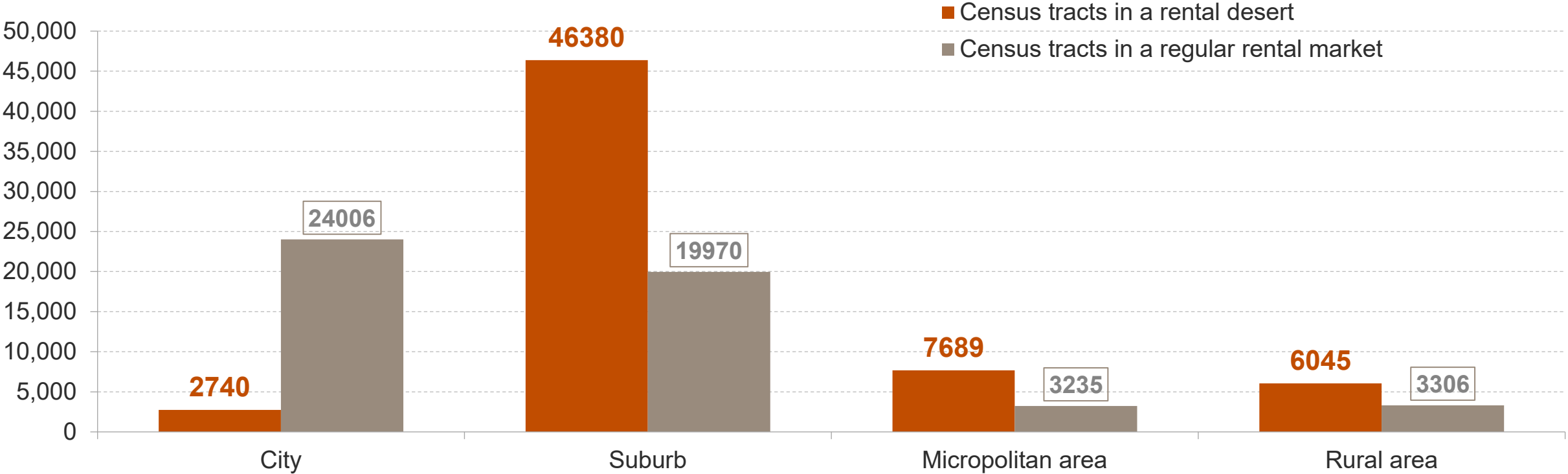




Results – Part One: Characteristics of rental deserts

A third of neighborhoods are rental deserts, and they're in the suburbs

Rental deserts by geography (Census tracts)

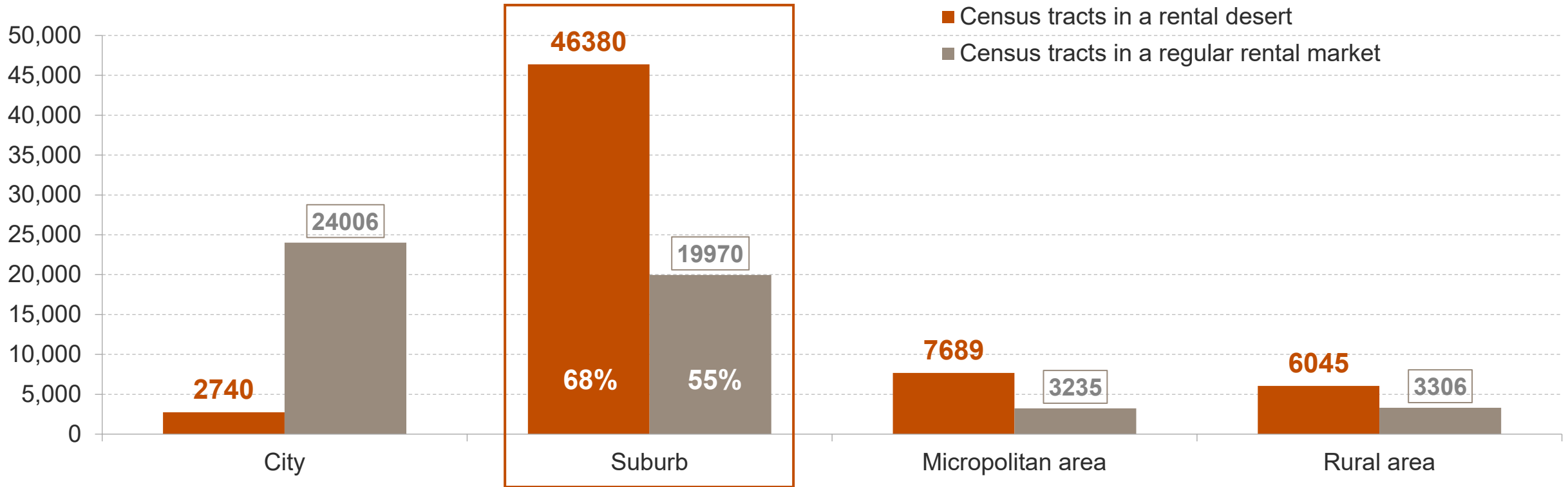


Notes: Urban and suburban tracts fall within metropolitan statistical areas. Micropolitan areas have populations between 10,000 and 50,000. Non-metropolitan tracts fall outside of metropolitan or micropolitan areas.

Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Rental deserts by geography

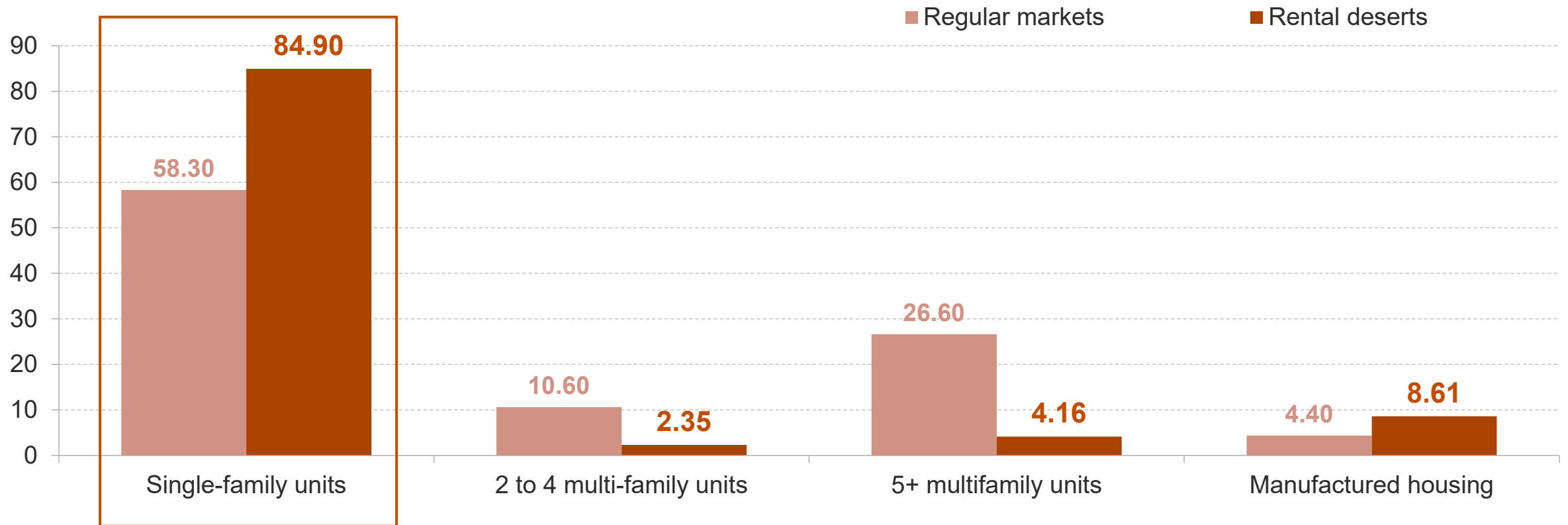
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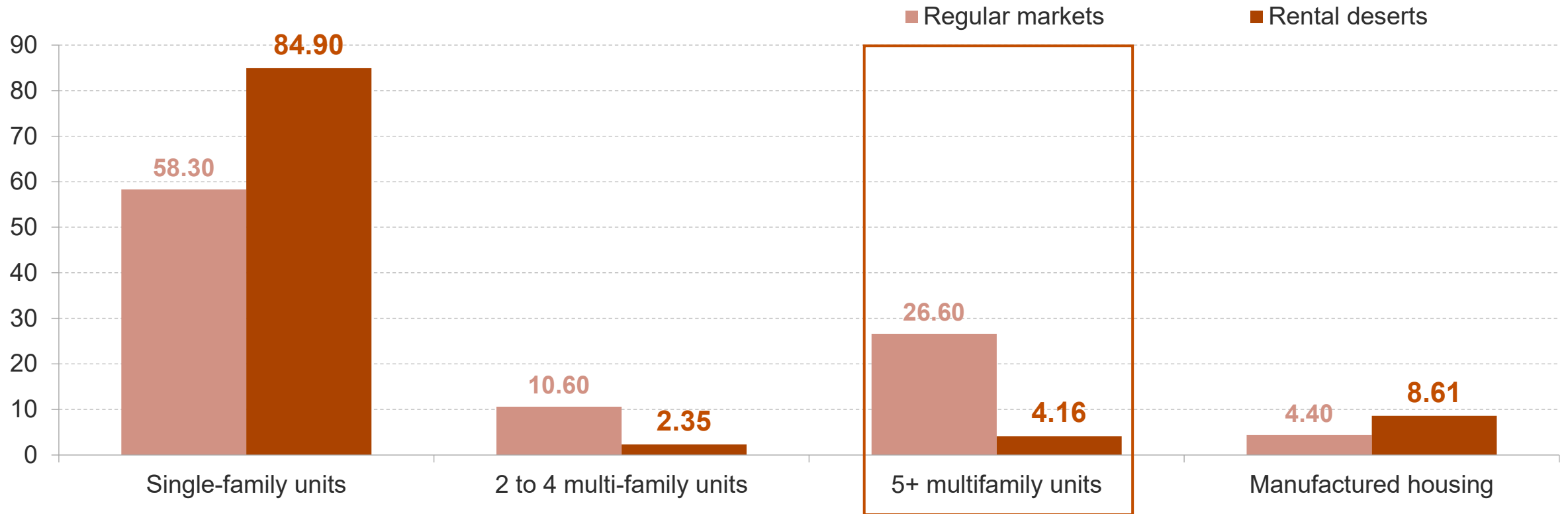
Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Single-family homes are more common in rental deserts



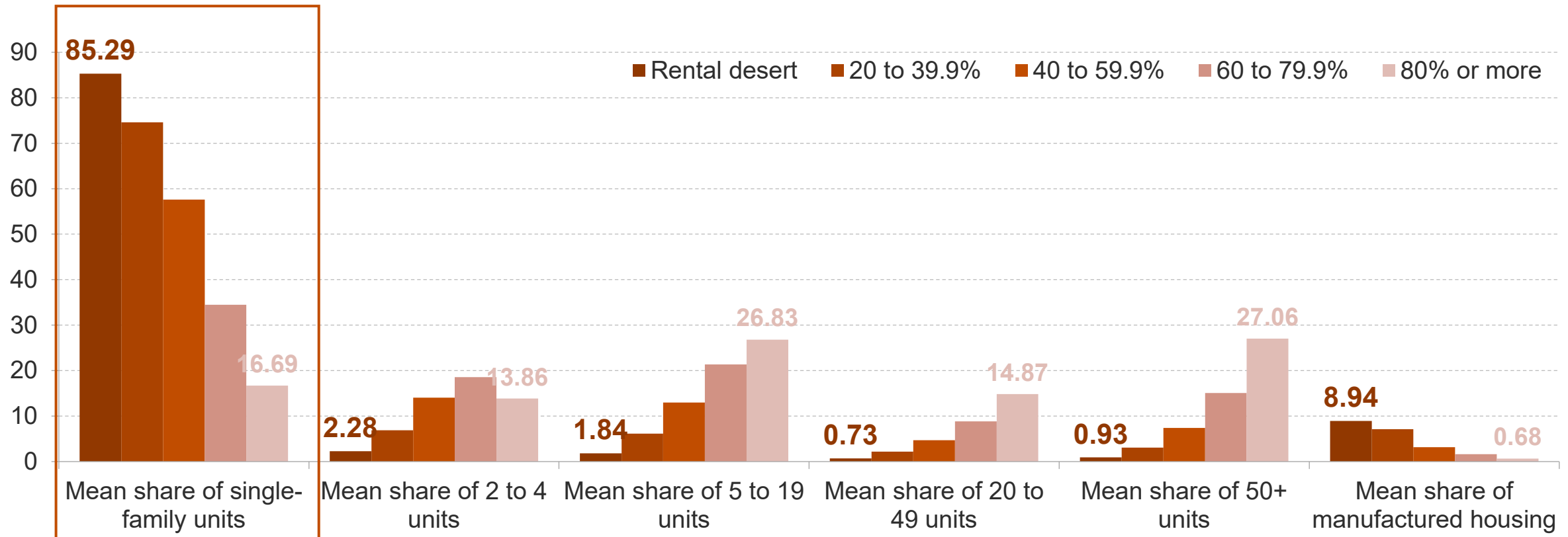
Sources: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Meanwhile, multifamily housing is scarce in rental deserts



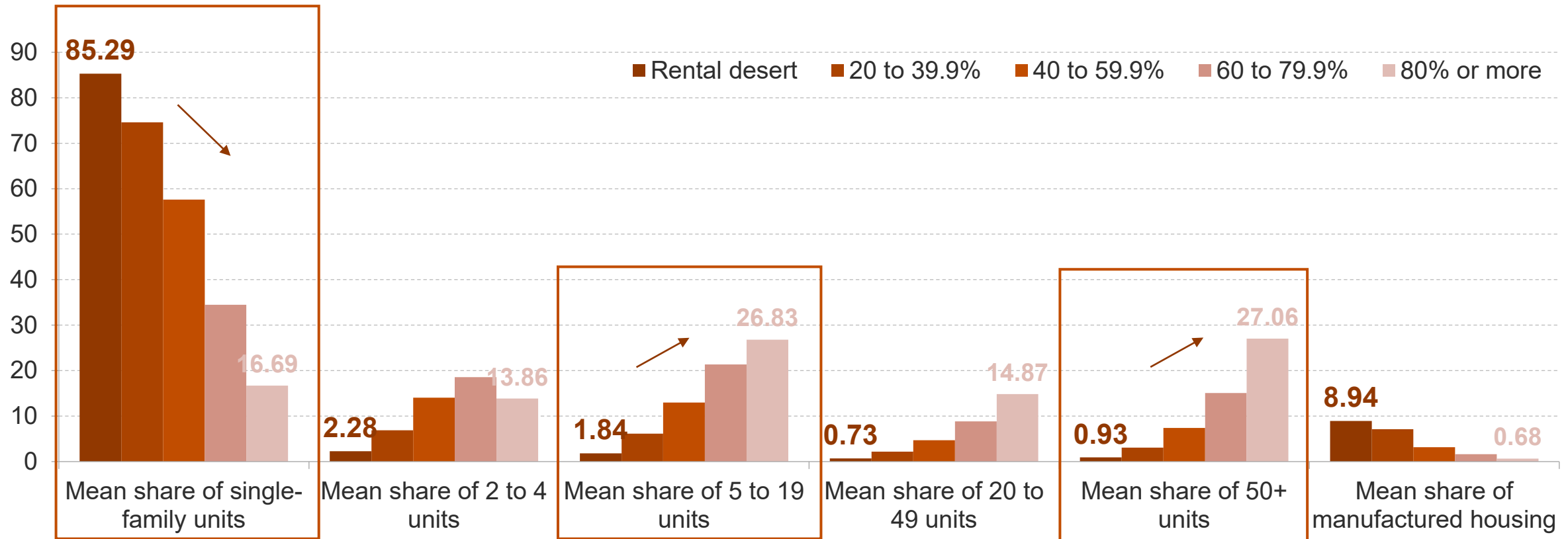
Sources: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Mean number of units by project, by rental market



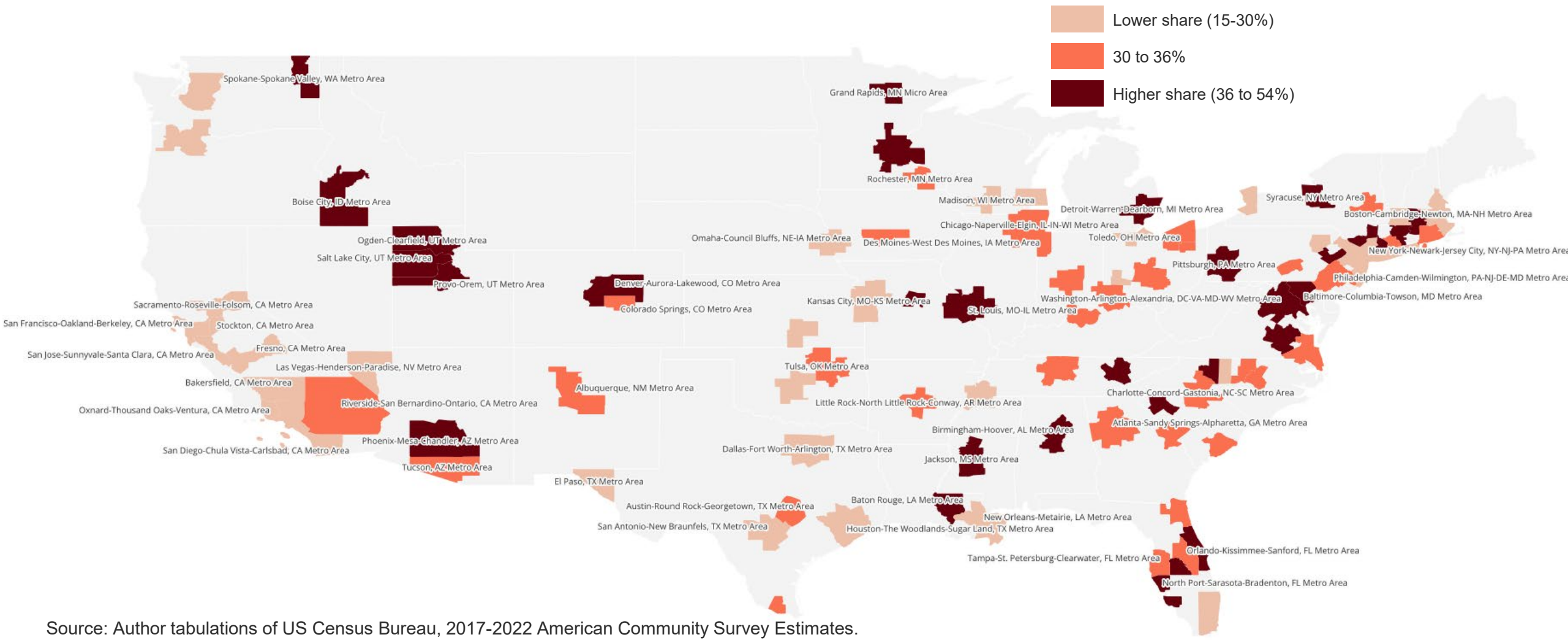
Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

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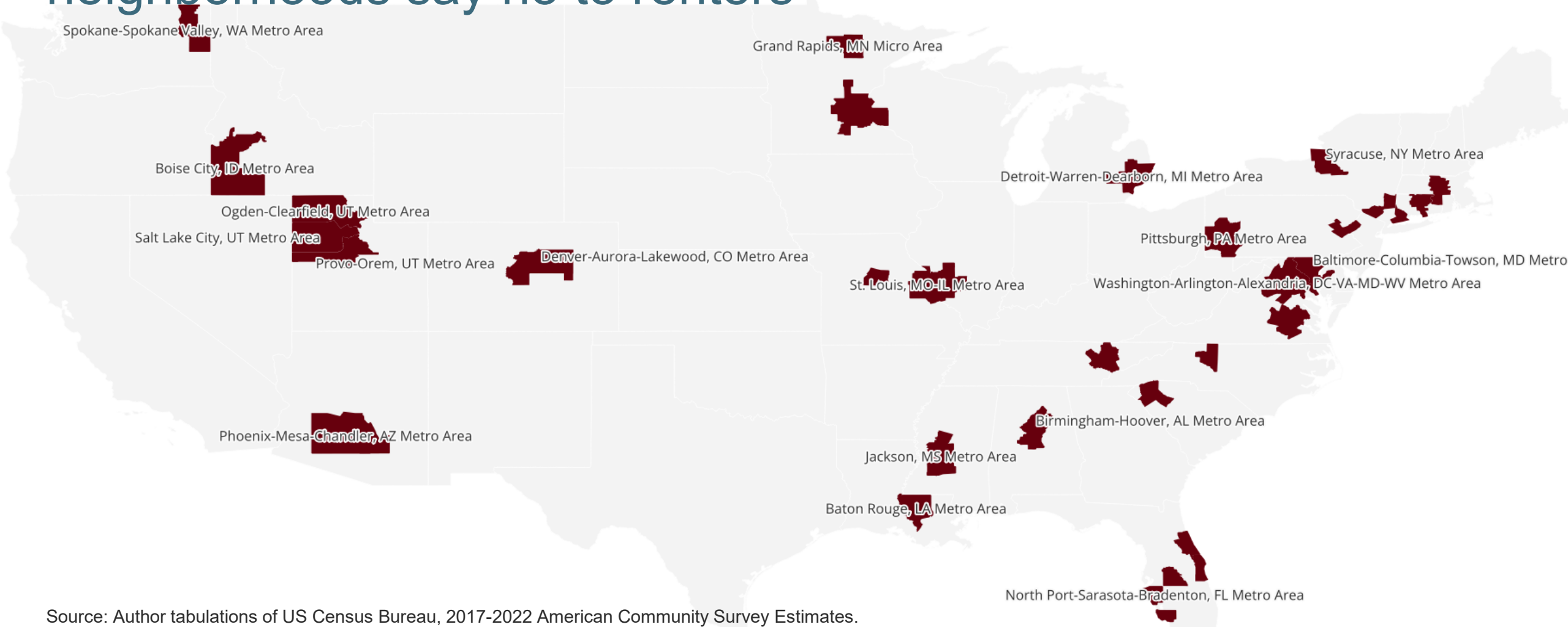
Share of rental deserts in the 100 largest metro areas



Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

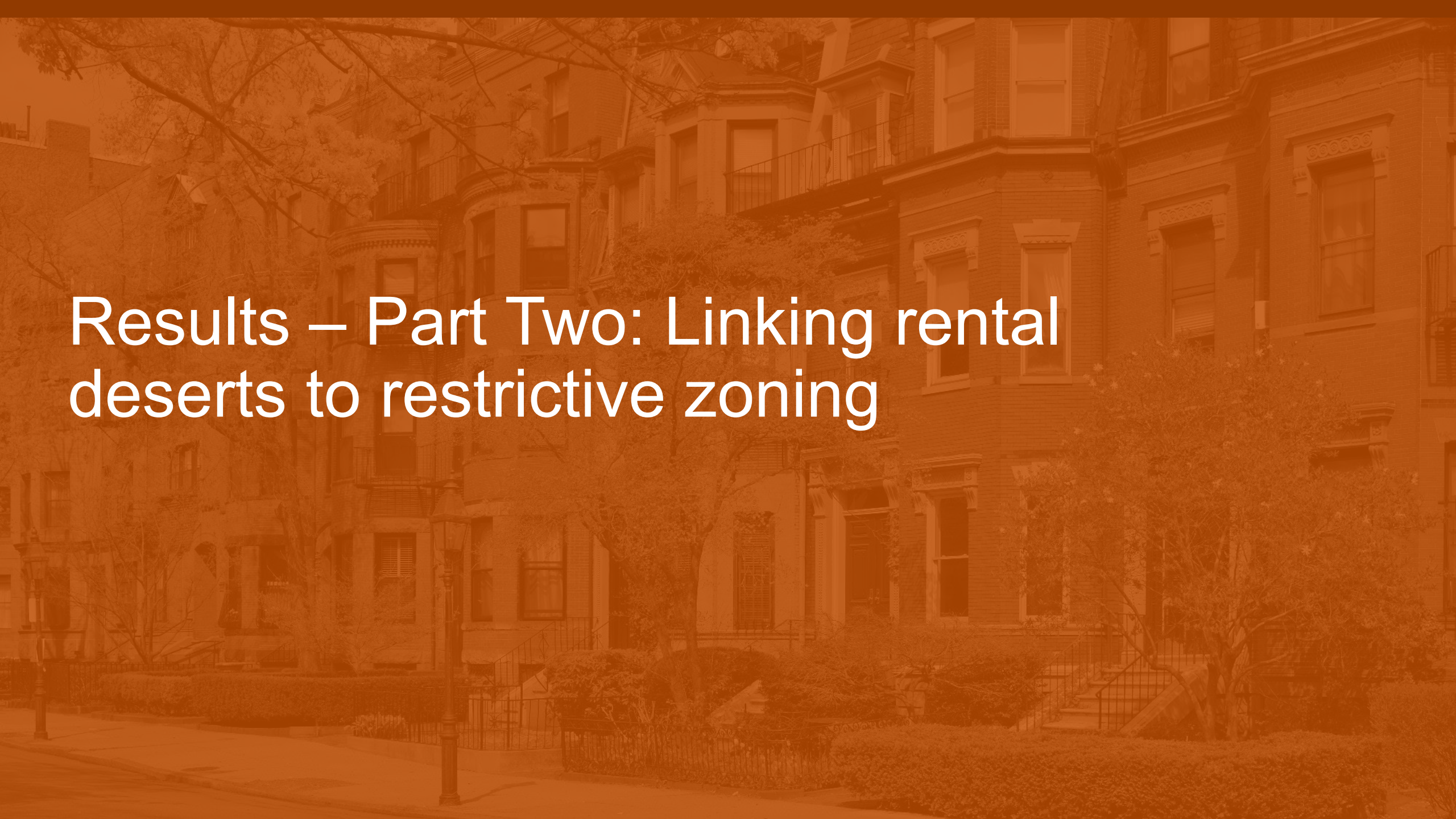
Policy context + Literature	Research design	Results	Policy implications + future research
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Rental desert hotspots: where more than a third of neighborhoods say no to renters



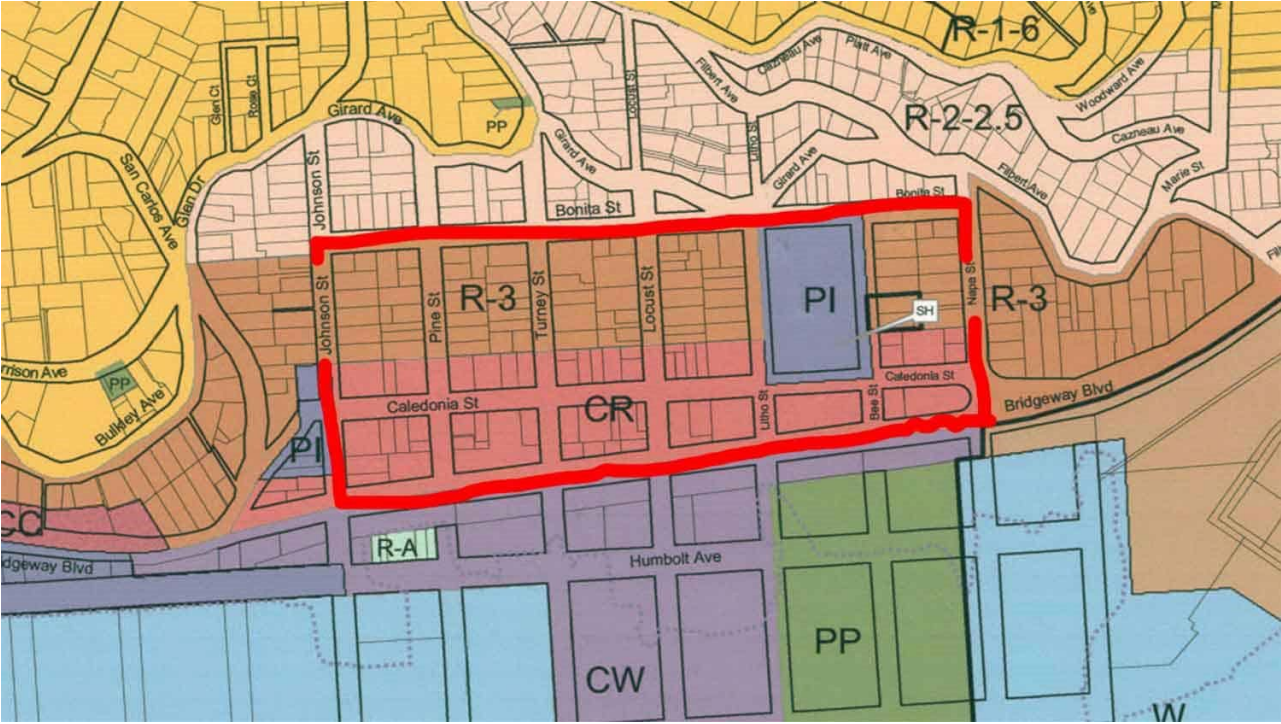
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Policy context + Literature	Research design	Results	Policy implications + future research
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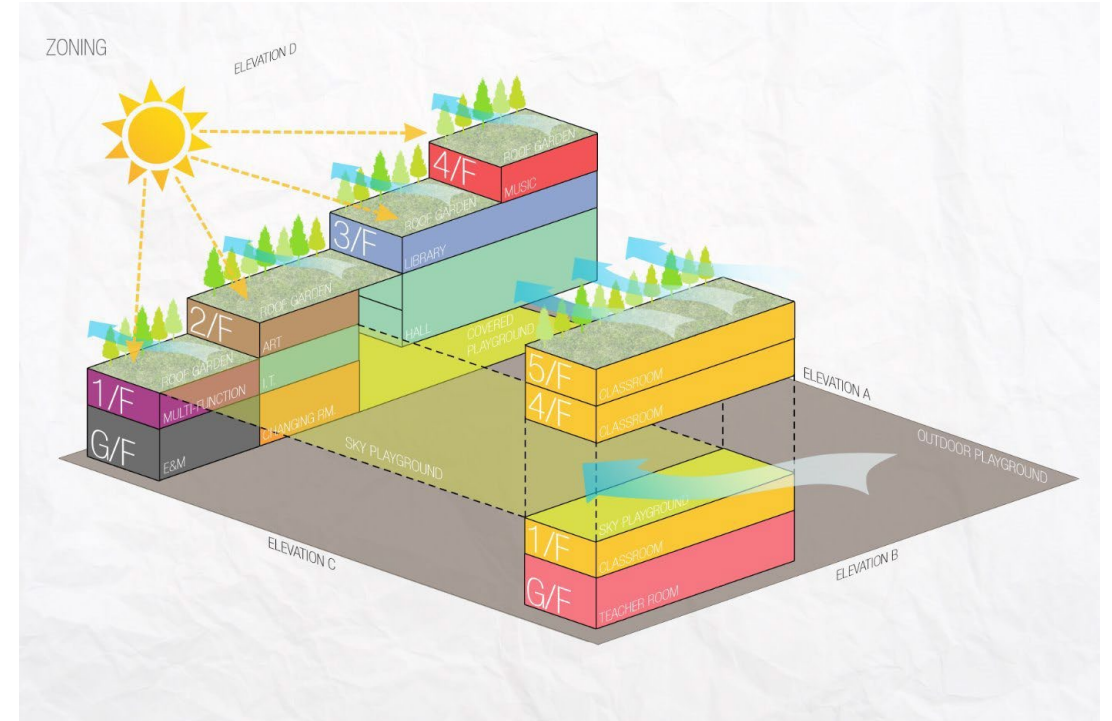
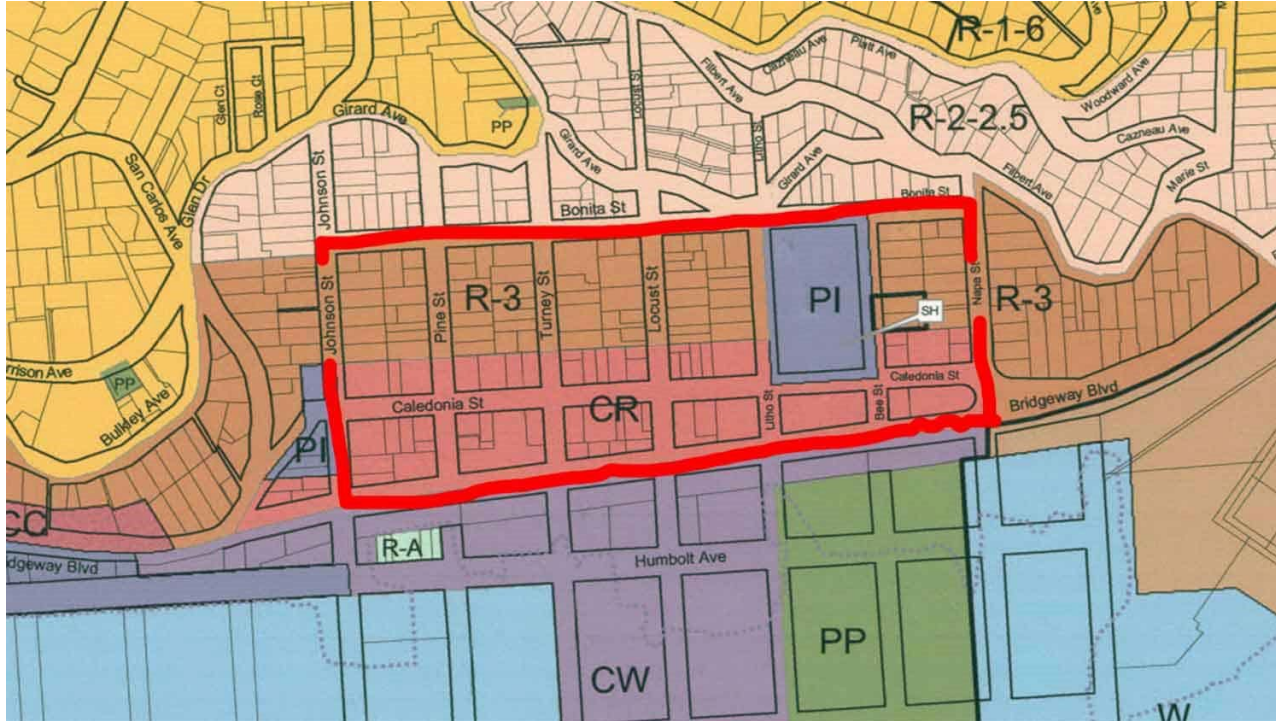


Results – Part Two: Linking rental deserts to restrictive zoning

Why zoning matters

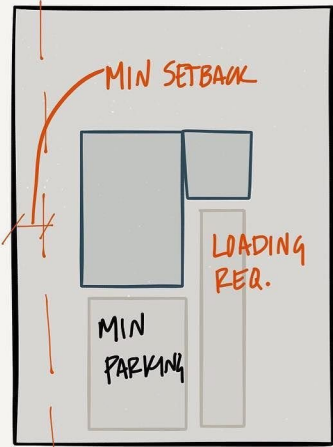
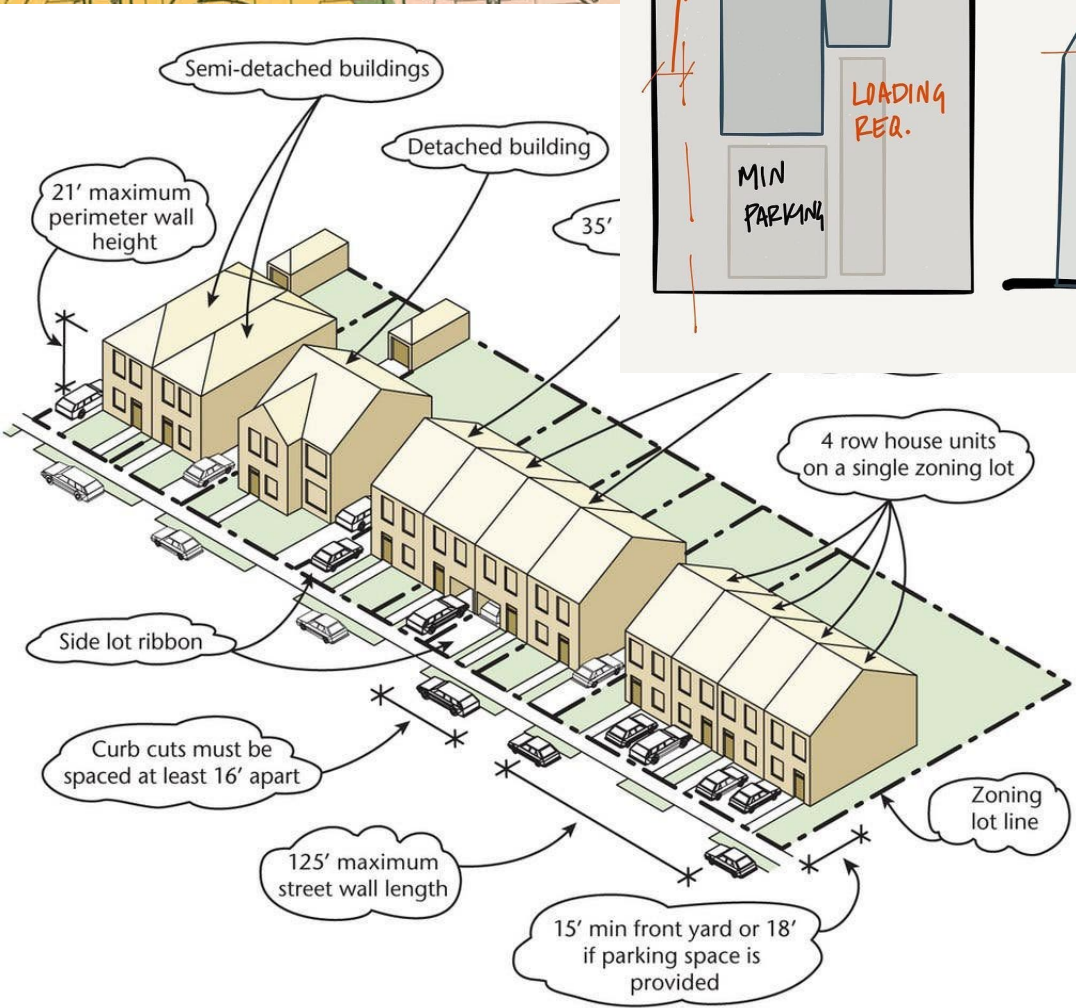


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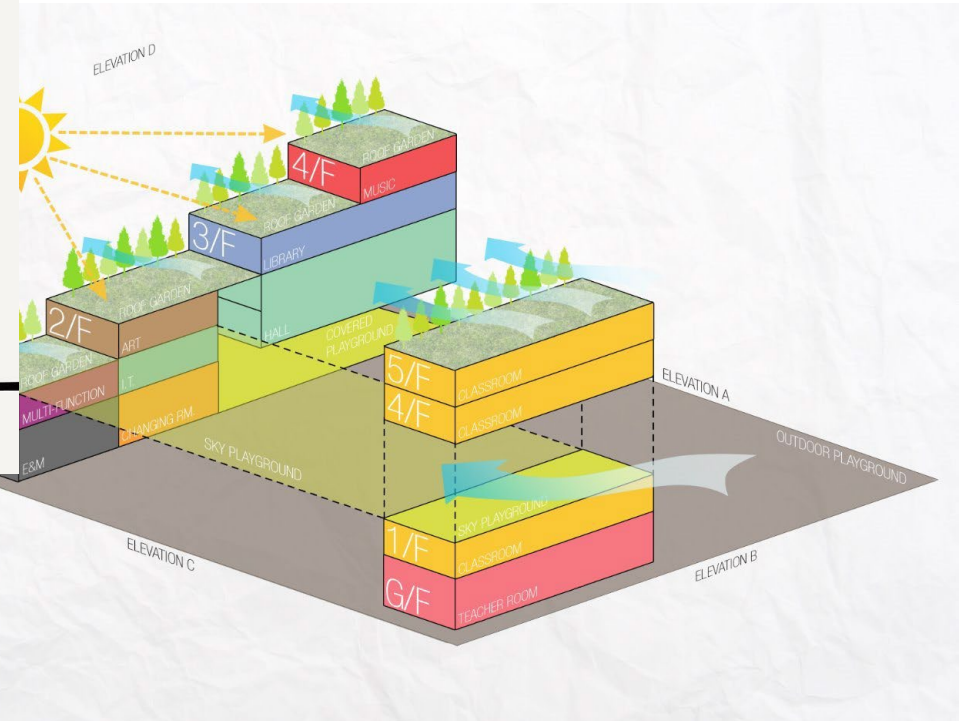
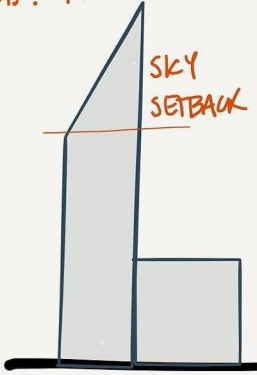


Why zoning matters

SITE ZONING



USE: BUSINESS OR INSTITUTIONAL
 FAR: 4.0



A research design linking rental deserts and zoning

Rental Share by CT (ACS data)	Portion of Rental Deserts by CT (ACS data)	Zoning Restrictiveness Index (NZLUD data)
Min. : 0.00	Min. :0.0000	Min. :-3.17
1st Qu.: 15.24	1st Qu.:0.0000	1st Qu.: -0.15
Median : 28.40	Median :0.0000	Median : 0.37
Mean : 33.60	Mean :0.3508	Mean : 0.42
3rd Qu.: 48.00	3rd Qu.:1.0000	3rd Qu.: 1.10
Max. :100.00	Max. :1.0000	Max. : 3.51
Observations: 84,415	Observations: 84,415	Observations: 36,581

 **EVICTIO N LAB**

NATIONAL ZONING AND LAND USE DATABASE

Policy context + Literature

Research design

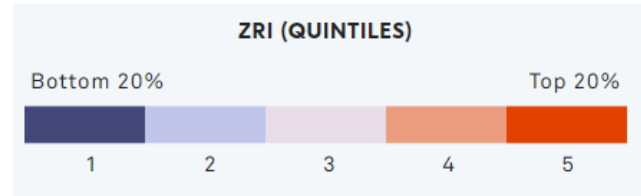
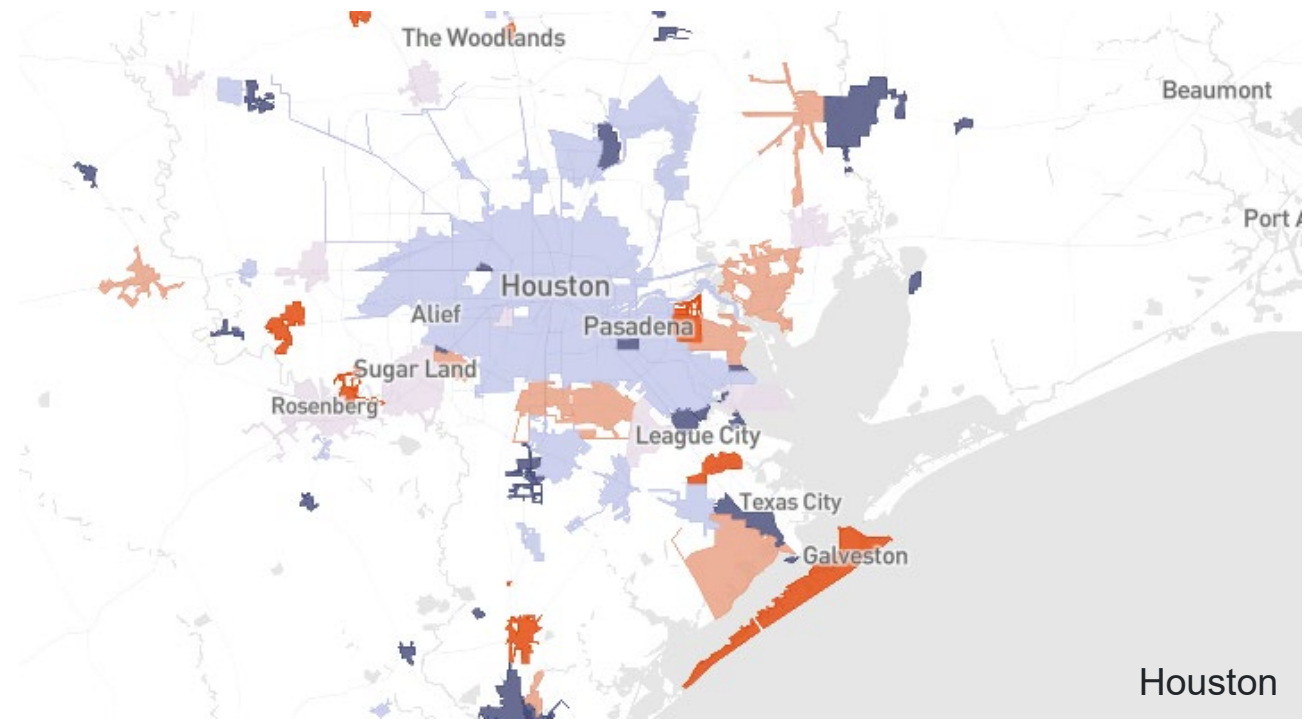
Results

Policy implications + future research


```

116     qnum = 1
117     for row in list(reader):
118         keywords = {}
119         for kw_pair_s in row[1:]:
120             if (kw_pair_s != ""):
121                 kw_pair = kw_pair_s.split("#")
122                 if len(kw_pair) > 1:
123                     k = kw_pair[0]
124                     weight = kw_pair[1]
125                     keywords[k] = weight
126             keyword_dict[qnum] = keywords
127             qnum += 1
128     if len(keyword_dict) == 0:
129         print("WARNING: No keywords found.")
130     values = []
131     keywords = keyword_dict

```



EVICTON LAB

NATIONAL ZONING AND LAND USE DATABASE

Rank	Metropolitan area Zoning	Restrictiveness Index score
1	Washington-Arlington-Alexandria, DC-VA-MD-WV	2.05
2	New York-Northern New Jersey-Long Island, NY-NJ-PA	2.01

A research design linking rental deserts and zoning

	Observations	Mean	Standard Deviation	Median	trimmed	mad	Minimum	Maximum	Range	Skew	Kurtosis	se
Explicit Growth Controls Index	36581	1.60E-01	7.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.00E+00	6.00E+00	6.47	47.68	0
Maximum Permitted Density Index	36581	1.45E+00	8.00E-01	1.00E+00	1.26E+00	0.00E+00	1.00E+00	5.00E+00	4.00E+00	2.03	4.22	0
Accessory-Dwelling Unit Index	36581	6.10E-01	4.90E-01	1.00E+00	6.40E-01	0.00E+00	0.00E+00	1.00E+00	1.00E+00	-0.46	-1.79	0
Maximum Height Index	35947	3.67E+00	1.19E+01	3.50E+01	3.61E+01	7.41E+00	1.00E+01	1.00E+02	9.00E+01	1.28	5.11	0.06
Minimum Required Parking Index	36503	1.76E+00	7.70E-01	2.00E+00	1.68E+00	3.70E-01	0.00E+00	1.00E+01	1.00E+01	3.31	22.51	0
Permitted multi-family housing index	36447	4.80E-01	2.10E-01	5.00E-01	4.80E-01	2.00E-01	0.00E+00	1.00E+00	1.00E+00	0.09	0.07	0
Zoning Restrictiveness Index	36581	4.20E-01	9.60E-01	3.90E-01	4.30E-01	9.40E-01	-3.17E+00	3.51E+00	6.68E+00	-0.09	-0.18	0

Policy context + Literature

Research design

Results

Policy implications + future research

Restrictive zoning is positively associated with rental deserts

	Estimate	Standard Error	t value	Pr(> t)
Explicit Growth Controls Index	8.397e-03***	2.993e-03	2.791e-03	6.7e-11
Maximum Permitted Density Index	1.822e-02***	2.791e-03	6.530	6.7e-11
Minimum Required Parking Index	7.664e-03**	2.752e-03	2.784	-11.5

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Policy context + Literature	Research design	Results	Policy implications + future research
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Accessory-Dwelling Unit Index	-3.657e-02***	4.322e-03	-8.463	<2e-16
Permitted Multi-Family Housing Index	-5.809e-02***	1.036e-02	-5.605	2.1e-08

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Policy context + Literature	Research design	Results	Policy implications + future research
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Restrictive zoning is positively associated with rental deserts

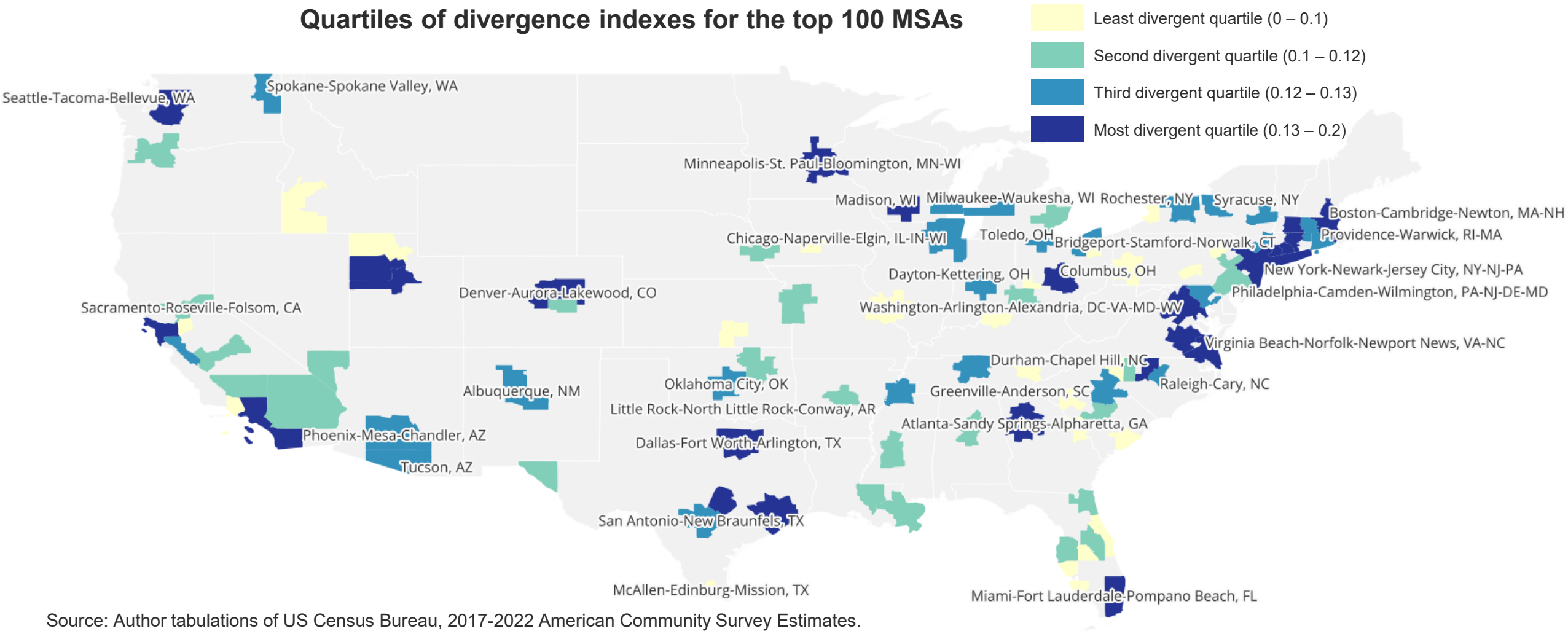
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Permitted Multi-Family Housing Index	-5.809e-02***	1.036e-02	-5.605	2.1e-08
Zoning Restrictiveness Index	-0.008001**	0.002604	-3.073	0.00212
Maximum Height Index	-1.659e-04	1.809e-04	-0.917	0.00537

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Policy context + Literature	Research design	Results	Policy implications + future research
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Rental/Ownership Housing Segregation

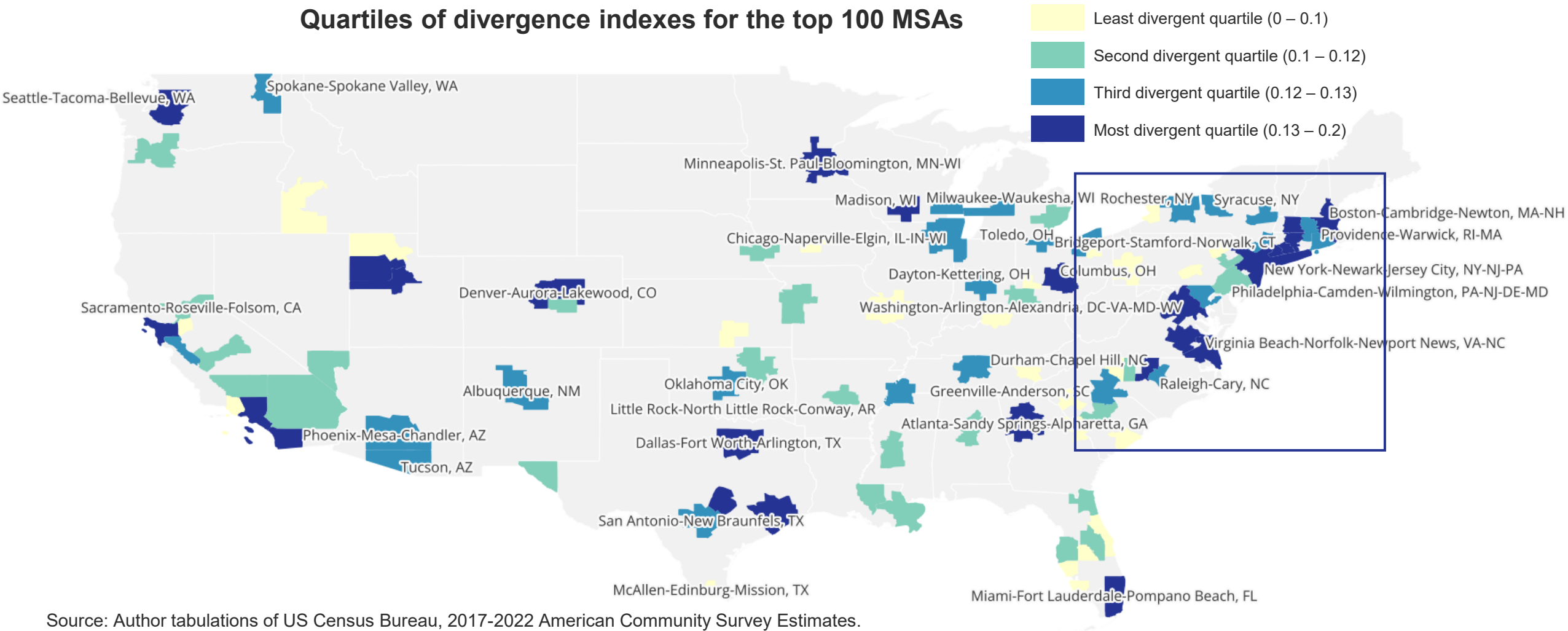
Quartiles of divergence indexes for the top 100 MSAs



Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

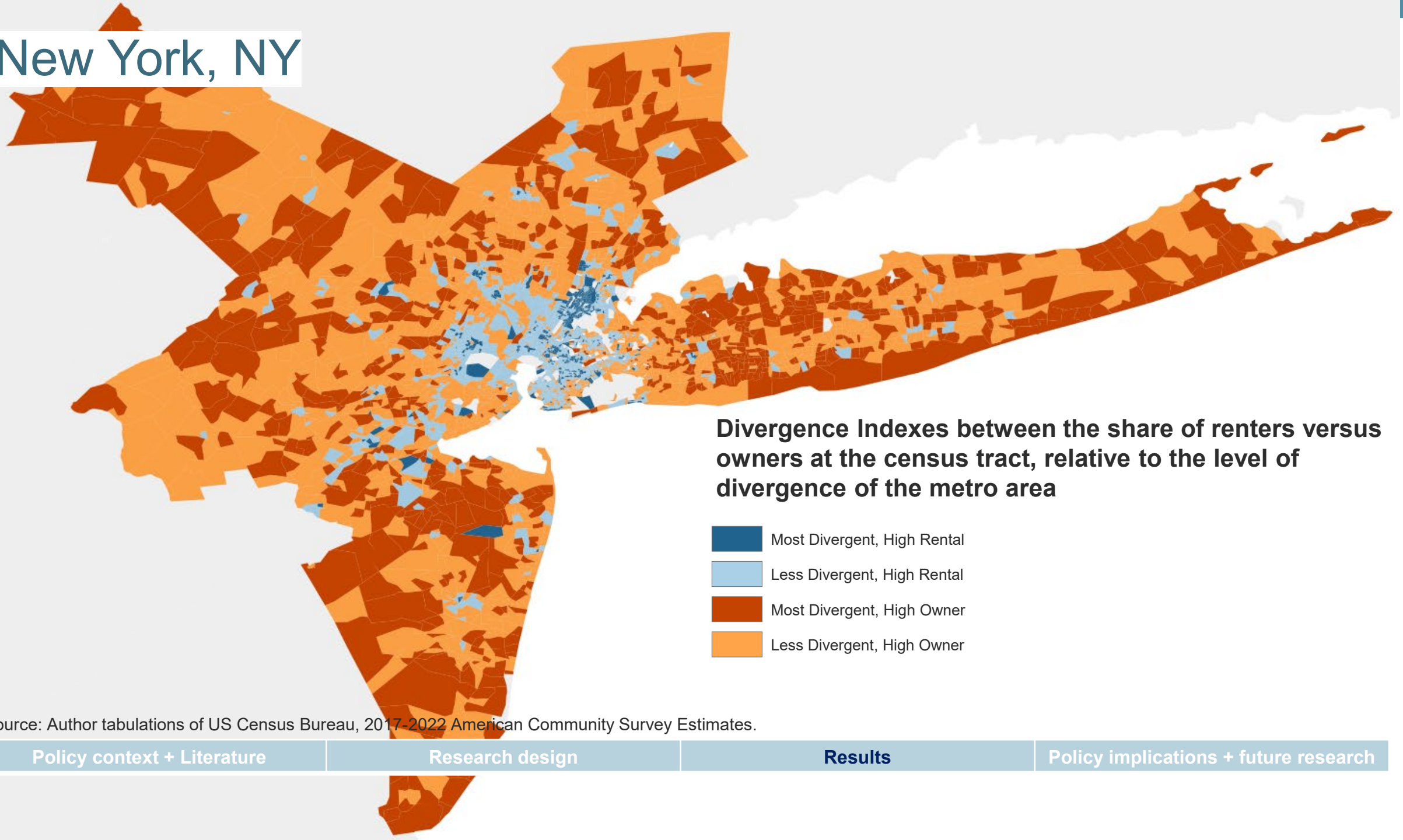
Rental/Ownership Housing Segregation

Quartiles of divergence indexes for the top 100 MSAs



Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

New York, NY



Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

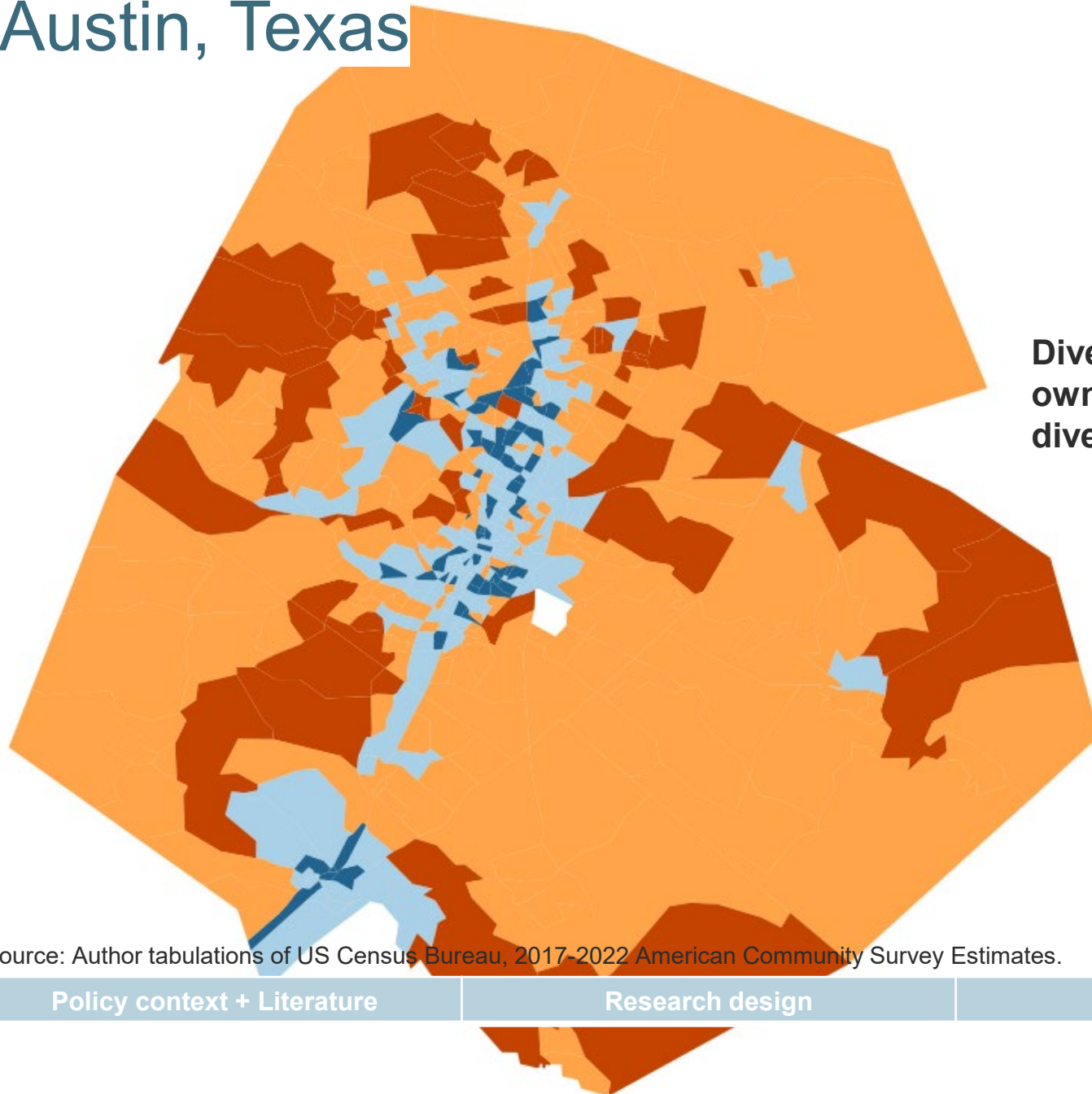
Policy context + Literature

Research design

Results

Policy implications + future research

Austin, Texas



Divergence Indexes between the share of renters versus owners at the census tract, relative to the level of divergence of the metro area

- Most Divergent, High Rental
- Less Divergent, High Rental
- Most Divergent, High Owner
- Less Divergent, High Owner

Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Policy context + Literature

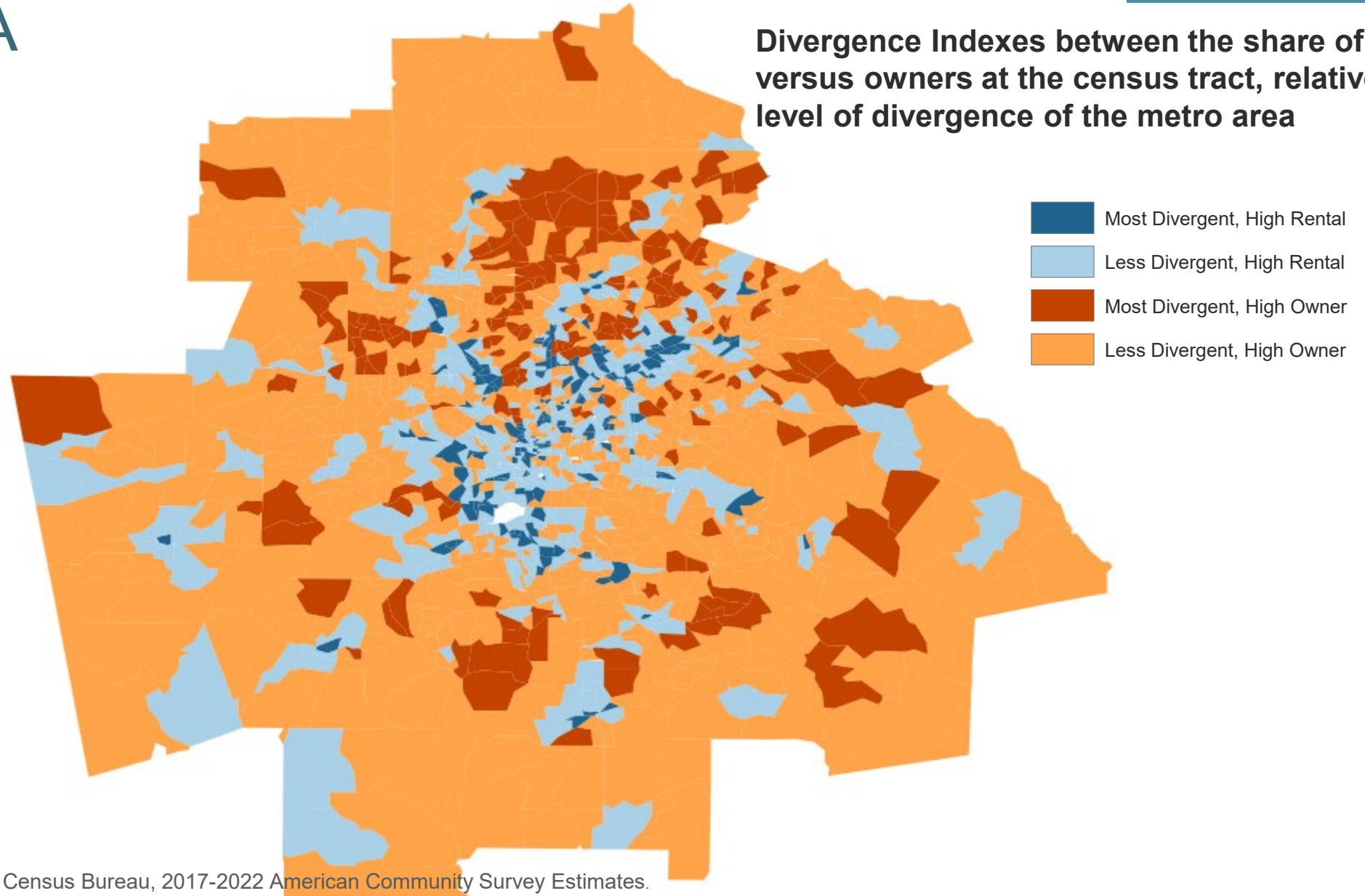
Research design

Results

Policy implications + future research

Atlanta, GA

Divergence Indexes between the share of renters versus owners at the census tract, relative to the level of divergence of the metro area



Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Policy context + Literature

Research design

Results

Policy implications + future research



Results – Part Three: Linking rental deserts to neighborhood segregation levels

Linking Housing Segregation to Racial Segregation

- By limiting the number of rental options, neighborhoods effectively exclude lower-income households from their communities.
- The concentration of the rental stock also contributes to segregation by race and ethnicity, as people of color are more likely to be renters.



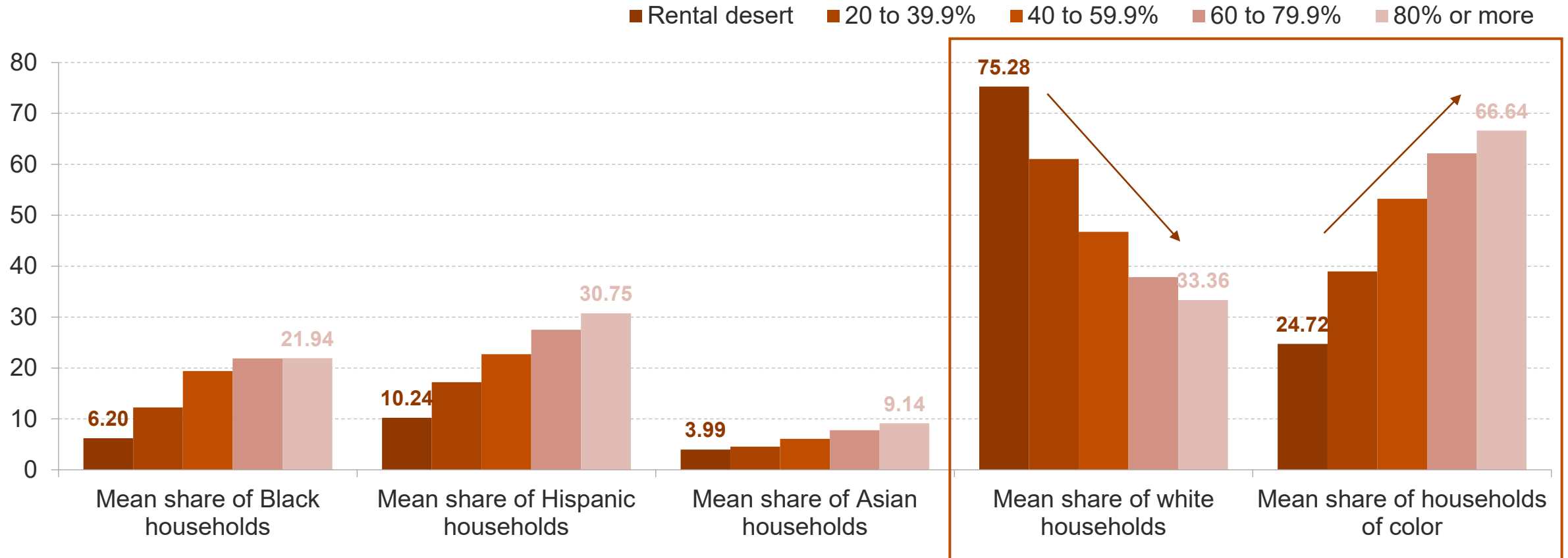
Policy context + Literature

Research design

Results

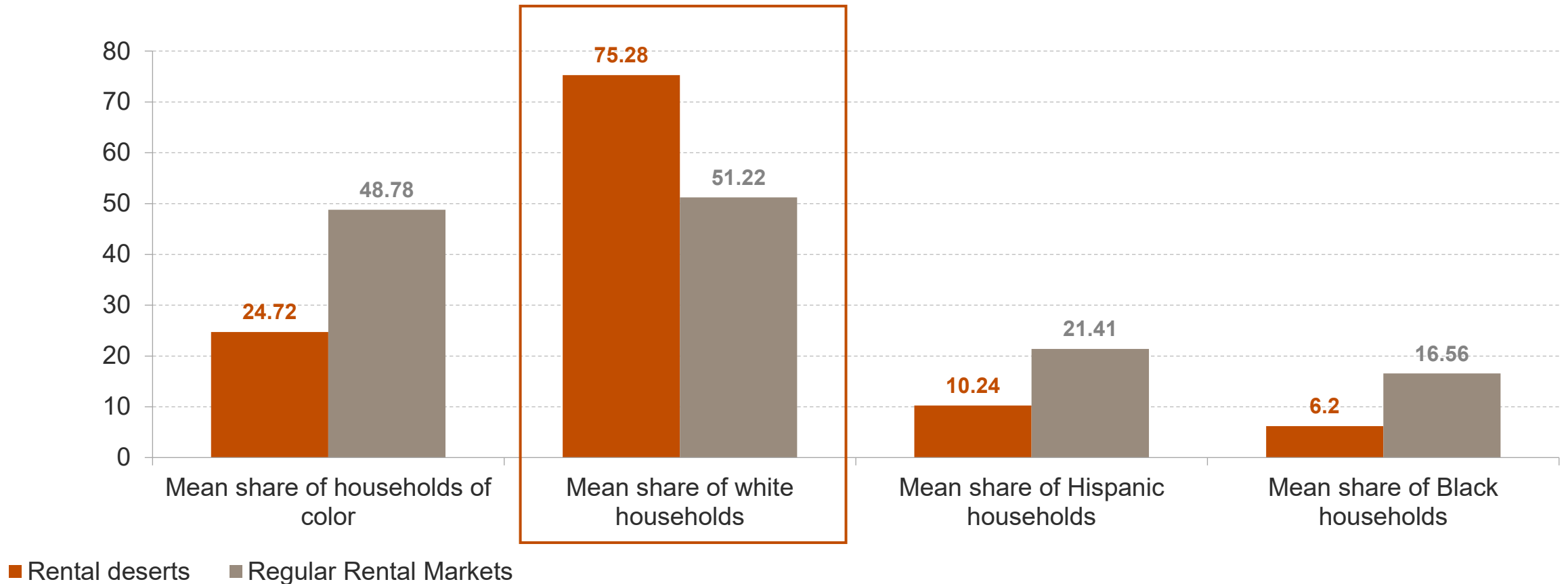
Policy implications + future research

Less than 17% of rental desert households are headed by a person of color



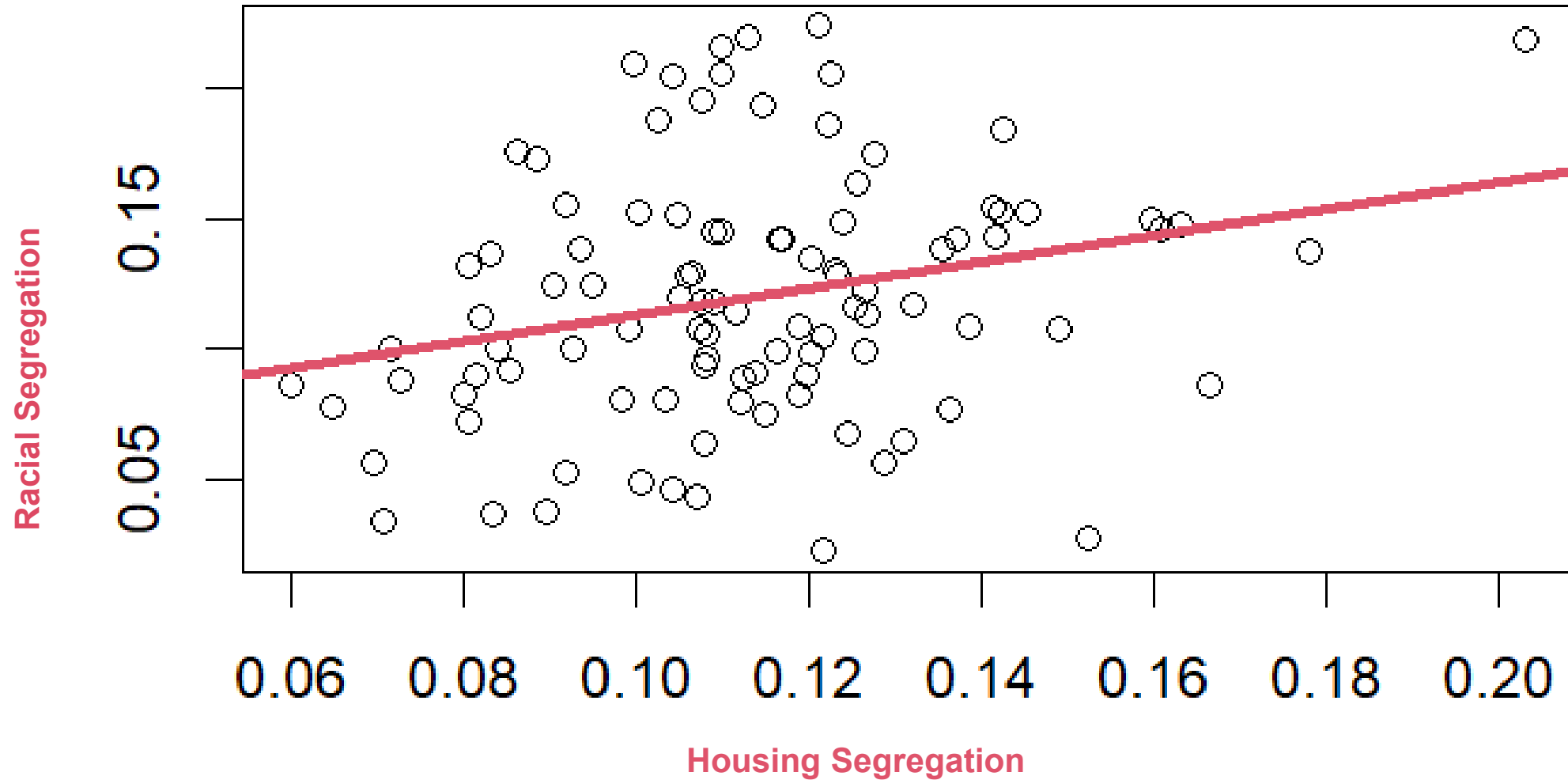
Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

Rental deserts count more white households than people of color

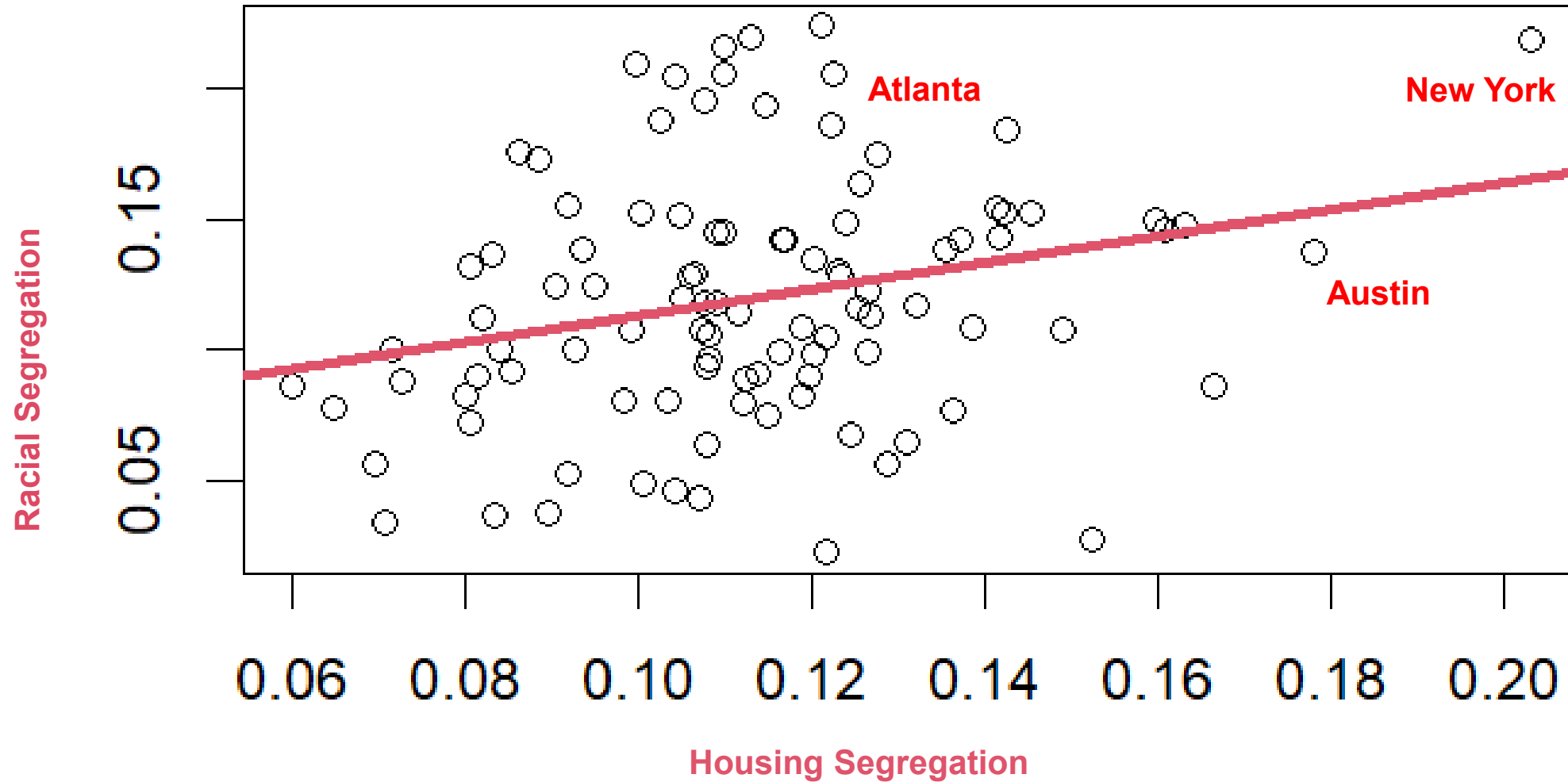


Source: Author tabulations of US Census Bureau, 2017-2022 American Community Survey Estimates.

In the rental deserts of the 100 largest metro areas, housing and racial segregation are positively correlated



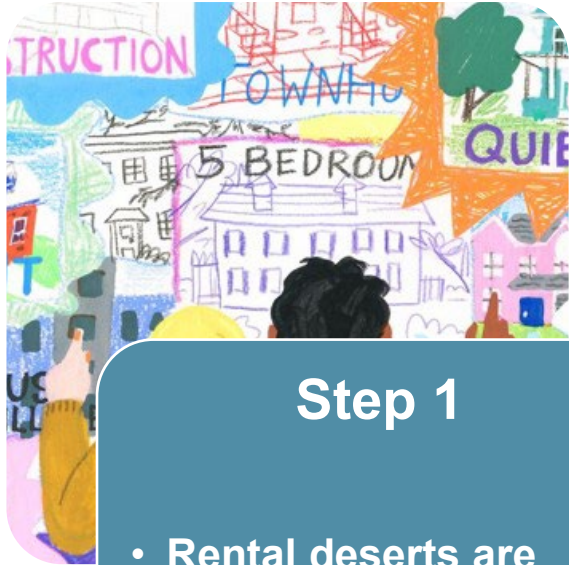
In the rental deserts of the 100 largest metro areas, housing and racial segregation are positively correlated



Conclusion

A dark, monochromatic photograph of a residential street. In the foreground, a concrete sidewalk runs along the left side of the frame. To the right, a two-story house with a porch is visible. The porch has a metal railing and a set of stairs leading up to it. The house has horizontal siding and a brick base. The porch has columns and a railing. The house number '1812' is visible on the porch column, and '1814' is visible on the house wall. There are trees and a utility pole on the left side of the street. The overall scene is dimly lit, suggesting an overcast day or dusk.

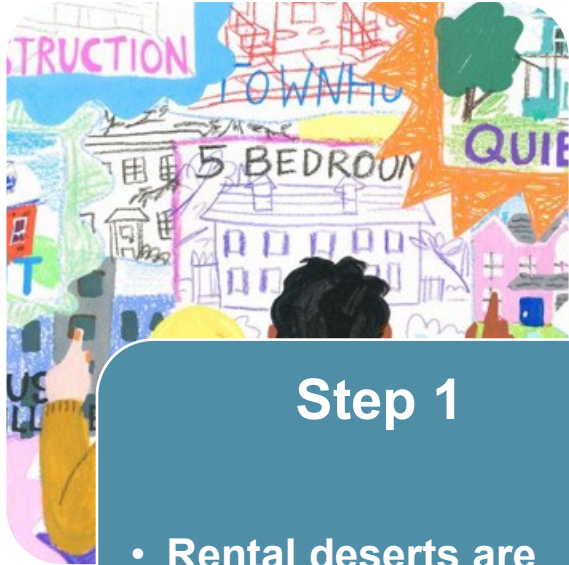
Conclusion



Step 1

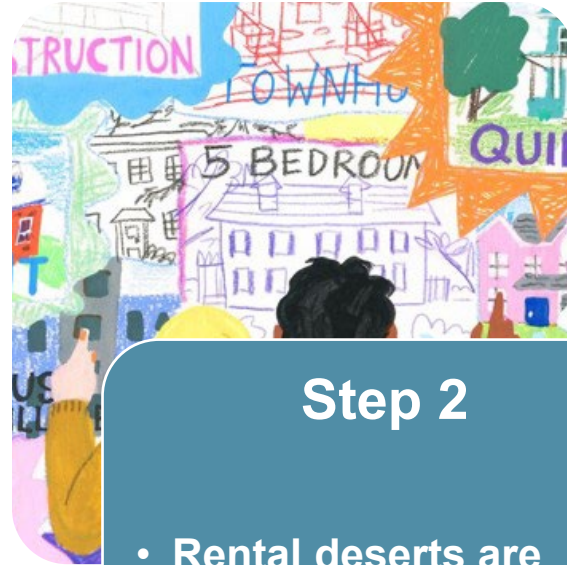
- Rental deserts are wealthier, whiter, and more suburban

Conclusion



Step 1

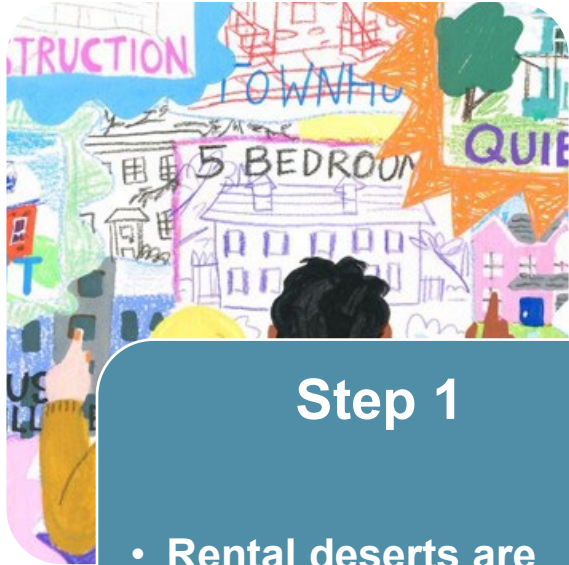
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Step 2

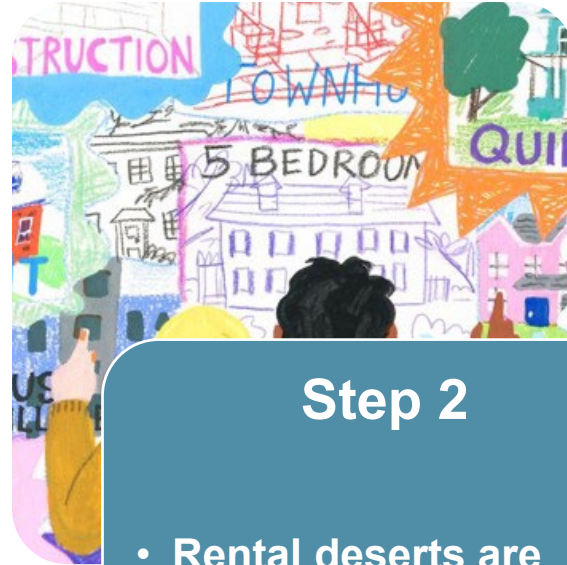
- Rental deserts are associated with restrictive zoning, and this results in housing segregation by tenure

Conclusion



Step 1

- Rental deserts are wealthier, whiter, and more suburban



Step 2

- Rental deserts are associated with restrictive zoning, and this results in housing segregation by tenure



Step 3

- Housing segregation is correlated with racial segregation in rental deserts



Policy recommendations

Policy Recommendations

- Zoning reform is a first step to expand geographic options for renters

Policy Recommendations

- Zoning reform is a first step to expand geographic options for renters



Policy Recommendations

- Zoning reform is a first step to expand geographic options for renters
- Some “successful” strategies
 - Zoning reform for multifamily development
 - Policy and design toolkits addressing NIMBY opposition
 - Shifts to by-right approval processes

State may deny grants to communities that don't comply with new MBTA housing law
The grants combined provide tens of millions of dollars to communities for an array of local planning and development programs
By [Andrew Brinker](#) Globe Staff. Updated August 17, 2023, 3:22 p.m.

Oregon tweaks restrictive land use law to address housing shortage
The bill will allow cities to acquire new land for development purposes
March 11, 2024, 3:28 pm By [Sarah Marx](#)

JOINT CENTER FOR HOUSING STUDIES OF HARVARD UNIVERSITY

The Salt Lake Tribune

New housing proposal in Utah would focus on encouraging mother-in-law apartments and more residential buildings along transit corridors

Los Angeles Times

Cambridge's Landmark Affordable Housing Policy, Explained

Don't be fooled: California's new housing laws make significant changes to zoning

The Harvard Crimson

Policy context + Literature

Research design

Results

Policy implications + future research

Policy Recommendations

- That takes work from the local to the federal level

Policy Recommendations

- Zoning changes and increased multifamily housing alone are **not enough**
- Building homes at lower price points
- Expanding housing subsidies in a range of neighborhoods



Next Research Steps

Next Research Steps



1. **Rental deserts and neighborhood opportunity, from divergence indexes to Gini indexes**

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2. **A longitudinal look at rental deserts, zoning restrictiveness, and supply/affordability**

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1. **Rental deserts and neighborhood opportunity, from divergence indexes to Gini indexes**



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3. **Rental deserts and neighborhood outcomes**

Thank You!

