Living with Density: Did Permitting Reform for ADUs in California Lower Neighborhood Home Values?[1]

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Outline

Research Questions

- What impact did recent increases in ADU building after a suite of 2019 permitting reforms in California have on neighborhood home values and rents?
- Can we learn anything about the preferences of local policymakers from these changes that may inform the nature of future reforms?

Motivation: Macro

- A growing literature has identified housing supply constraints as a major impedement to labor mobility in the United States (Hsieh and Moretti, 2019; Ganong and Shoag, 2017; Hoxie, Shoag and Veuger, 2023)
- In a currency union, like the United States, labor mobility is also an important avenue for macroeconmic adjustment (Blanchard and Katz, 1992)
- Housing supply constraints may be locking workers out of high productivity areas (Ganong and Shoag, 2017; Glaeser, Gyourko and Saks, 2006; Hoxie, Shoag and Veuger, 2023)

Motivation: Macro

Figure 2: Wages Less Housing Costs by Skill Group and Density

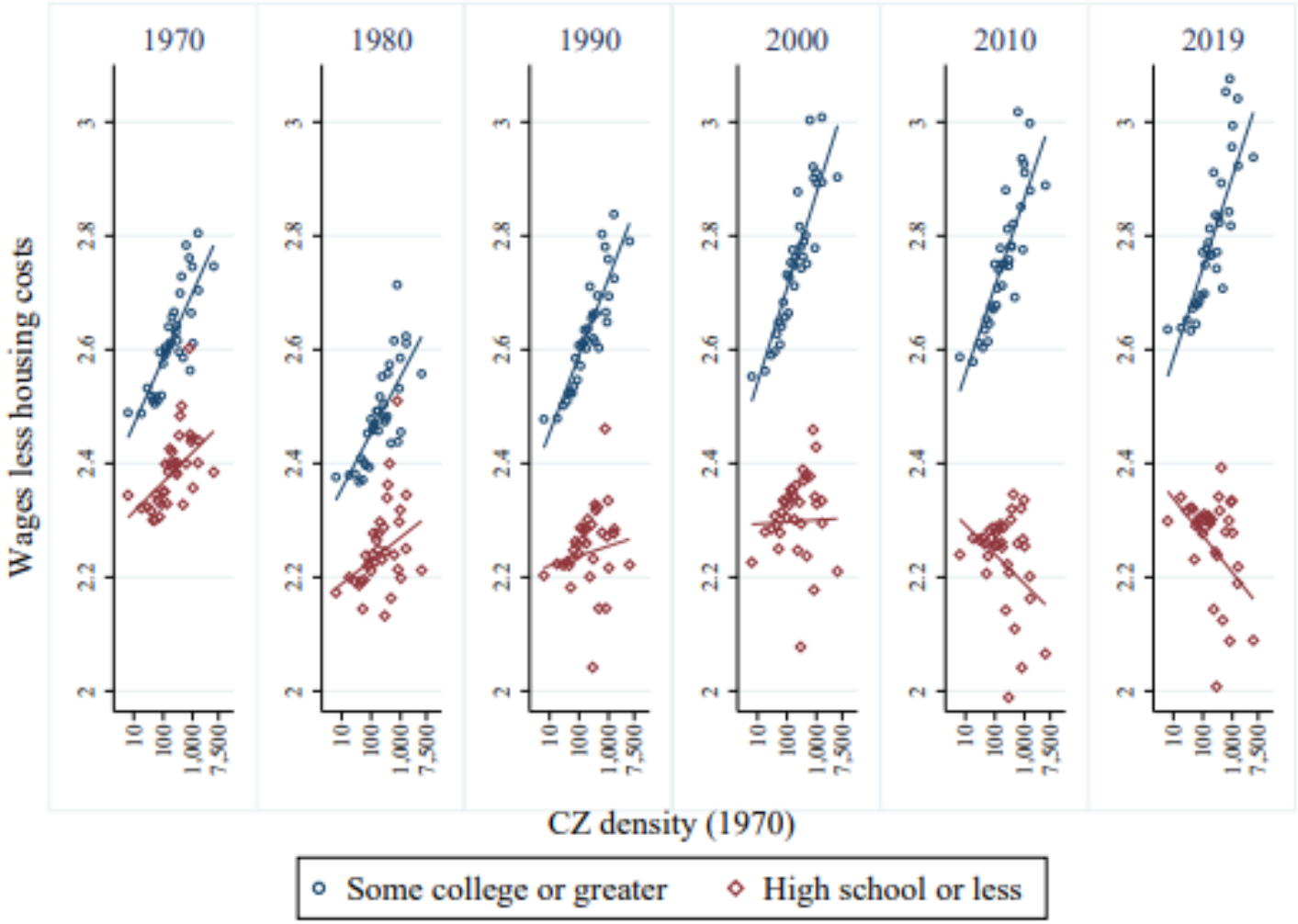

Figure from Hoxie, Shoag and Veuger (2023)

Motivation: Macro

Figure: Housing Costs as a Share of Wages by Skill Group and Density

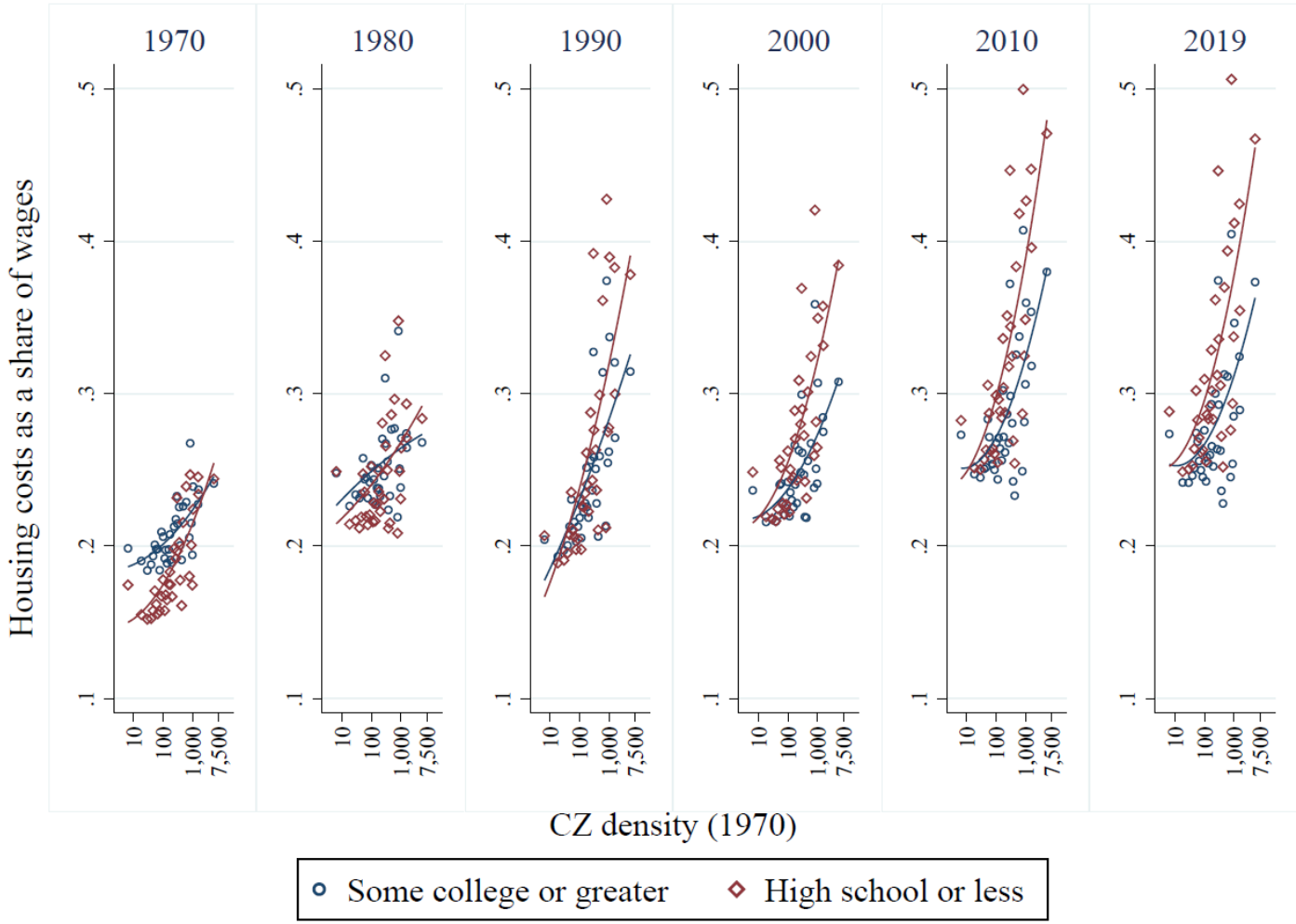

Figure from Hoxie, Shoag and Veuger (2023)

Motivation: Micro

- In the basic monocentric city model, workers trade off housing consumption and commute time to firms in the city center. Higher income workers have a preference for consuming more housing and therefore live farther away from the city center (Anas, Arnott and Small, 1998; Brueckner, 2011)
- Cities also exhibit agglomeration economies, which are characterized by deep labor markets, lower transportation costs for firms, knowledge spillovers, and oftentimes higher returns to skills (Autor, 2019; Eckert, Ganapati and Walsh, 2020; Marshall, 1890; Glaeser et al., 1992)
- A more flexible housing supply may allow workers to reduce commute times and for urban labor markets to function more efficiently

Motivation: Micro

Figure: Within-Metro Area Distribution of Workers by Population Density Percentile and Income Quartile

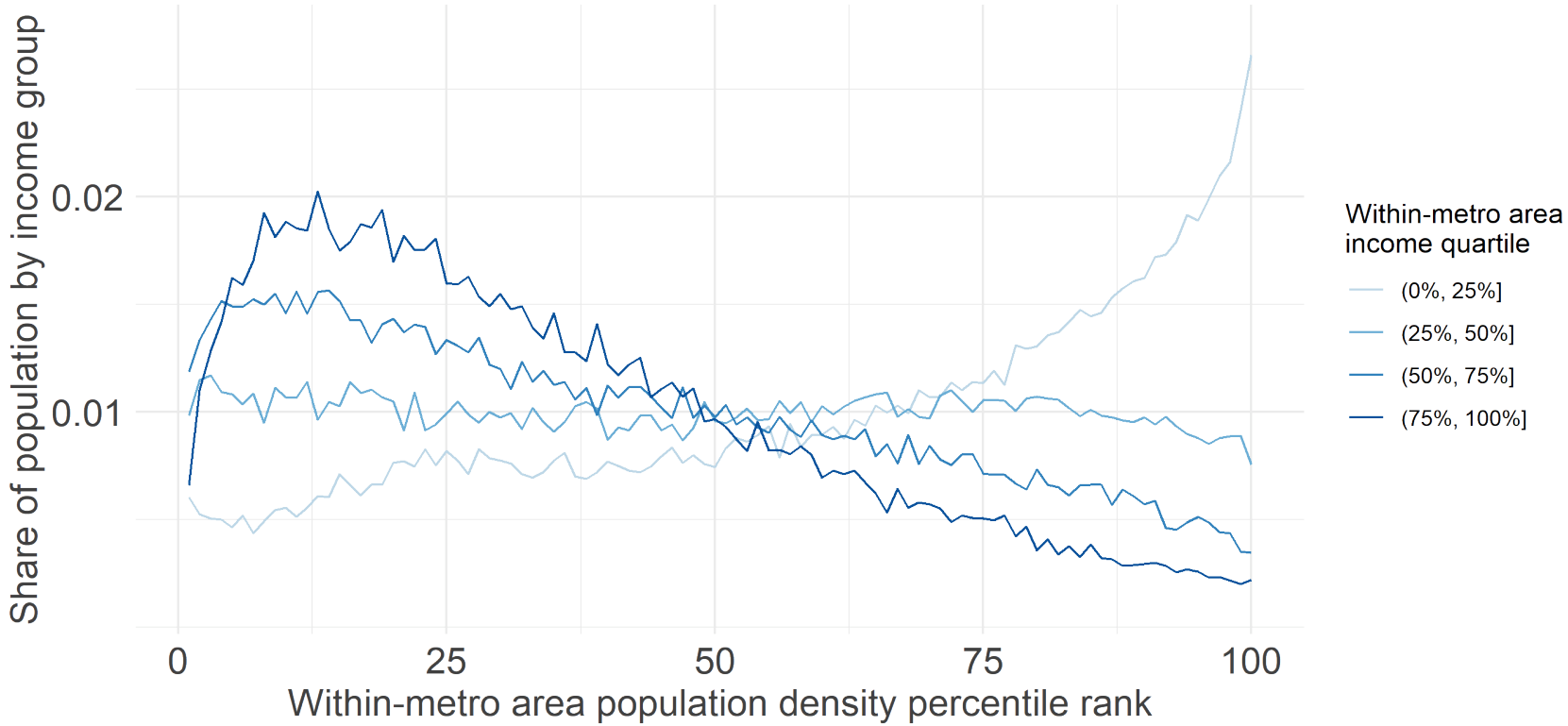

Figure from Hoxie, Brooks and Veuger (2021)

Motivation: Policy

- Local zoning laws are the most common barrier to expanding the housing supply and they have been linked to increased home prices and rents (Gray, 2022; Ganong and Shoag, 2017; Glaeser, Gyourko and Saks, 2006; Brueckner, 2011; Severen and Plantinga, 2018; Kahn, Vaughn and Zasloff, 2010)
- The governor of California has set a goal of building millions of new housing units in the next decade (Tobias, 2022)
- California passed three major reforms to ADU permitting laws in 2019 that significantly limit the ability of localities to obstruct new building (California YIMBY, 2022*a*,*b*,*c*)

Motivation: Policy

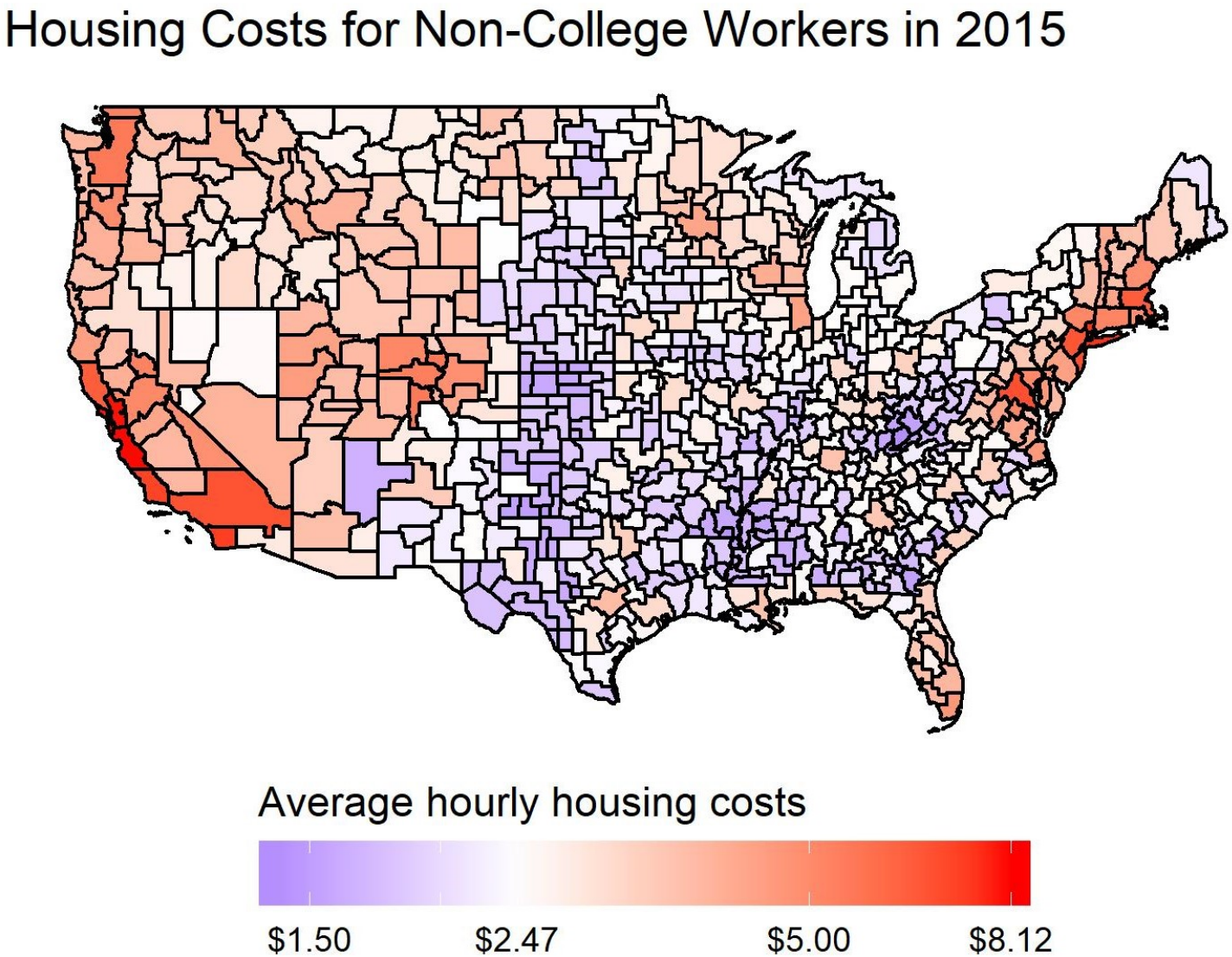

Figure uses data from Hoxie, Shoag and Veuger (2023)

Motivation: Policy

Figure: New ADU Builds in California, 2018 to 2021

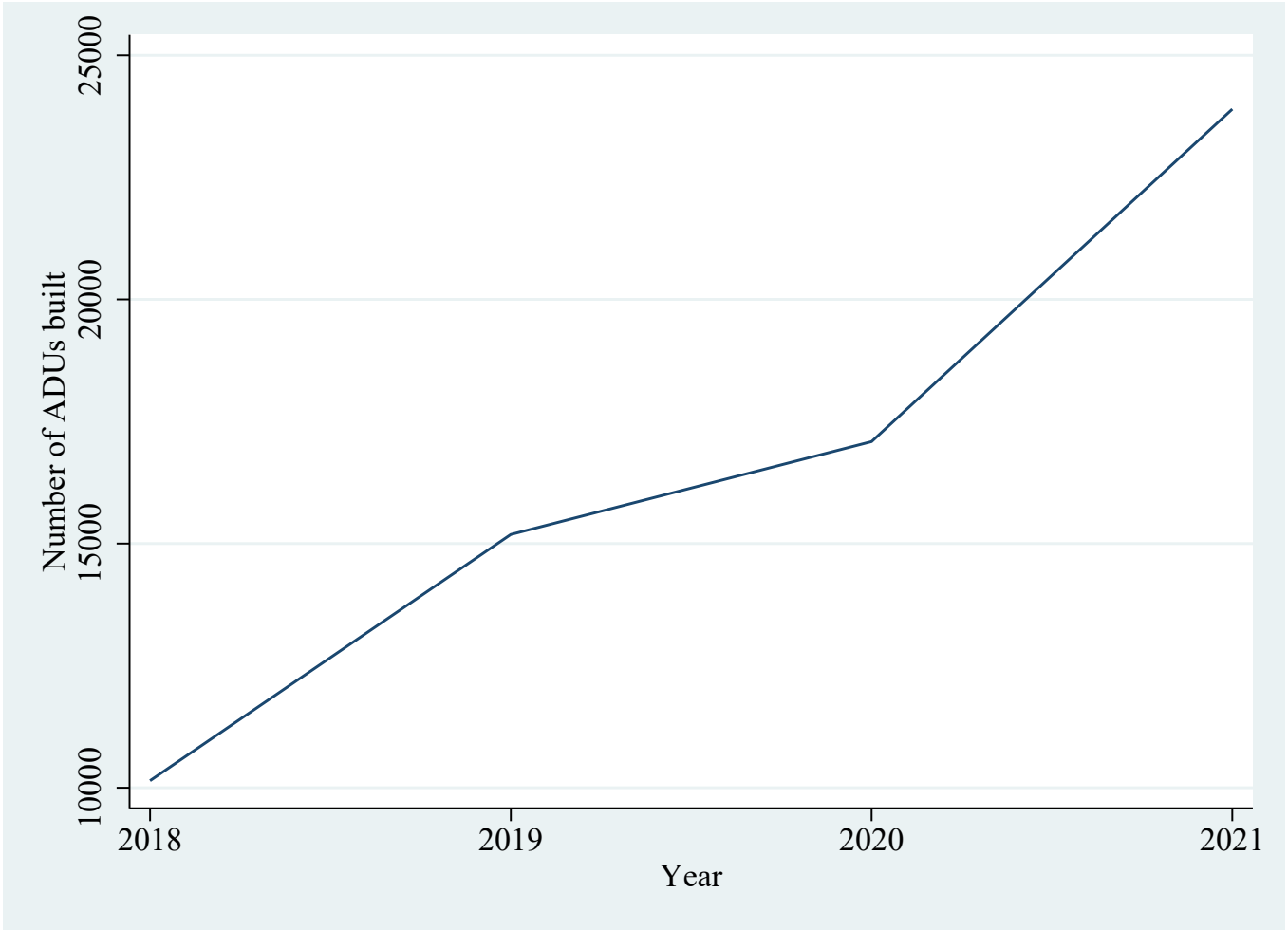

Figure uses data from California Department of Housing and Community Development (2022)

Motivation: Policy

- There has been significant political push-back to local zoning reforms in the past, as governments likely place higher weight on the welfare of homeowners and landlords that already vote in the locality than on renters that have yet to move in (Glaeser, 2013; Garrick, 2021; Dillon, 2019)

Contributions

- Measure the impacts of building an ADU on the value of the homeowner's land and structures, but also on her neighbor's value of land and structure, and on rents
  - Diamond (2016)
  - Hornbeck and Kenniston (2017)
- Understand the relative welfare weights that local and state governments implicitly put on renters and homeowners to justify permitting reforms
  - These should differ in "open" or "closed" models of localities (Glaeser, 2013)
- There is a small literature specifically on the impacts of the California Coastal Zone (Severen and Plantinga, 2018; Kahn, Vaughn and Zasloff, 2010)

The California Coastal Zone

- The California Coastal Commission (CACC) was created by a ballot initiative in 1972 to govern development within the California Coastal Zone (California Coastal Commission, 2022)
- Within the Coastal Zone, landowners must obtain both a regular permit and a special coastal permit to modify structures on their land (Severen and Plantinga, 2018; Kahn, Vaughn and Zasloff, 2010; California Coastal Commission, 2022)
- Therefore, zoning reforms passed by the legislature are ineffective within the Coastal Zone, as the state government cannot change the coastal permitting process with legislation

The California Coastal Zone

Figure: Map of Average Home Price Index in Zip Codes within 15 KM of the Coast and the Coastal Zone Boundary, 2015 to 2021

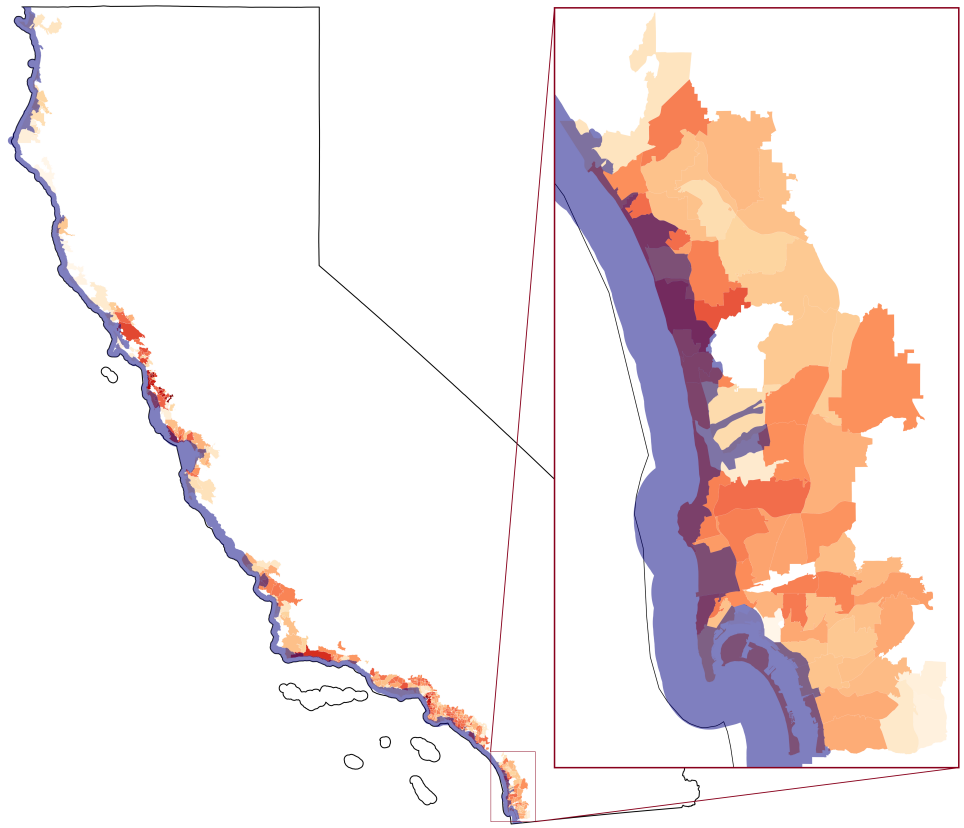

Figure data and shapefile from California Coastal Commission (2014), US Census Bureau (2022), UDS Mapper (2022), Bogin, Doerner and Larson (2016)

Research Design

- We propose to use both a spatial difference in differences and a spatial regression discontinuity design to measure the impacts of the 2019 ADU permitting reforms on home values and rents, similar to Hornbeck and Kenniston (2017) and Severen and Plantinga (2018)
- The Coastal Zone provides a discrete boundary with qualitatively different permitting regimes on either side of it both before and after state-wide ADU reforms
- Critically, the onerous coastal permitting process within the Coastal Zone remains unchanged throughout

Research Design

- About 18,000 ADUs have been built in zip codes that touch the Coastal Zone since 2019
- A simple regression of $\Delta ADU_{i,2019-2021} = \gamma + \pi * ShareCZ_i + \vartheta_i$ by zip code, where $ShareCZ_i$ is the share of zip code area within the coastal zone, shows a strong negative relationship between the Coastal Zone and new ADUs

Research Design

Spatial difference in differences

$$\Delta Y_{it} = \alpha + \theta * \vec{X_{it}} + (\sum_{t=0}^{T} \beta_t * I_i^{CZ} * I_t^{year}) + \delta * I_i^{CZ} + \epsilon_{it}$$

- ΔY_{it} is the change in land values, rents, and home values
- I_i^{CZ} is a dummy for lots in the Coastal Zone
- I_t^{year} are year dummies, with 2019 $\in (0, T)$
- $\vec{X_{it}}$ is a vector of controls
- α is a constant and ϵ_{it} is an error term

Research Design

Spatial fuzzy regression discontinuity

$$\Delta ADU_{it} = \pi + \theta * f(lat_i, long_i) + \psi * \vec{X}_{it} + \epsilon_{it}$$

$$\Delta Y_{it} = \alpha + \beta * \Delta ADU_{it} * I_t^{Post} + \gamma * \vec{X}_{it} + \delta * I_t^{Post} + \eta * \Delta ADU_{it} + \varepsilon_{it}$$

- ΔY_{it} is the change in land values, rents, and home values
- $f(lat_i, long_i)$ is a function that describes the linear distance from the coastal boundary
- ADU_{it} are new ADUs built on a given lot
- I_t^{Post} is a dummy takinga value of 1 in 2019 and onwards
- $\vec{X}_{it}$ is a vector of controls
- α and π are constants and ϵ_{it} and ε_{it} are error terms

Welfare

The decision to build an ADU

$$P(a = 1) = P(c < V_a - V_0) \tag{1}$$

$$V_a - V_0 := \Delta \bar{V} \tag{2}$$

- The CDF $1 - F(\Delta \bar{V})$ is observable
- We are interested in $\frac{\partial(1-F(\Delta \bar{V}))}{\partial c}$
- We are interested in $\frac{\partial^2(1-F(\Delta \bar{V}))}{\partial c \partial N}$
- $a = 1$ is the event of building an ADU
- c is the permitting cost of building an ADU (normalizing building costs to 0)
- $V_a - V_0$ is the difference in total lot value to the owner with and without an ADU
- N is a measure of neighborhood characteristics

Welfare

Welfare from permitting changes

$$dW = \overbrace{\rho * \beta_r(L)(P(a=1))(R)}^{Renters} + \overbrace{\omega * \beta_h(L)(P(a=1))(H)}^{Owners}$$

$$dW = \rho * \beta_r(\Delta ADU)(R) + \omega * \beta_h(\Delta ADU)(H)$$

- β_r is the coefficient for change in rents
- β_h is the coefficient for change in home values
- dW is the change in welfare
- L is the number of lots
- R is the number of rental units
- H is the number of housing units
- ρ and ω are welfare weights on renters and owners, respectively

Welfare

$$dW = 0 \Leftrightarrow \frac{\omega}{\rho} = -\frac{\beta_r R}{\beta_h H} \tag{3}$$

- We can estimate this with our RD framework
- This will provide a relative weight placed on owners and renters when the state is indifferent between passing permitting reform or not
- This provides a lower bound of the ratio localities, which did not pass permitting reform, had on owners and renters

Next Steps

- Parcel data on lots is available from county clerk recorders in the 15 coastal counties of CA
- CoreLogic, Zillow, and other services also sell parcel level assesment, tax, and transaction data
- These parcel data can be attached to permit data from the California Department of Housing and Community Development (2022)
- Data on rents will need to come from a website like Zillow, Apartments.com, Craigslist, etc and be matched by address to parcels

Next Steps

- Data on rents will need to come from a website like Zillow, Apartments.com, Craigslist, etc and be matched by address to parcels
- We plan to do a pilot in San Diego County, which has a large fraction of the overlap of the Coastal Zone with residential neighborhoods
- With a successful pilot, we hope to then secure funding to purchase parcel data.
- California passed another suite of laws in 2021, going into effect in 2022, targeting developments of up to 10 units, which we hope to apply this framework to in the future (SB 9 and SB 10) (California YIMBY, 2021*b*,*a*).

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