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POLICY BRIEF

California's Density Deficit and the Likely Impact of SB 827

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Among the 15 American metropolitan areas with the fastest growth in demand for housing since 2012, 5 are in California. Those 5 California metros grew more slowly than all 10 other metros on the list.

A dearth of new homes and expanding housing demand cause high inflation in the housing market. Even though Denver, Austin, and Seattle had higher demand growth than any California metro, rent in those cities grew less rapidly. Had California implemented measures to accommodate growing demand as the rest of the country does, its residents would now be paying less in rent. This article considers a counterfactual thought experiment: how would California's housing market be different today if a policy currently under consideration in the California Senate—SB 827, which would allow new residential building along public transit corridors—had been implemented six years ago? I estimate that rent would be 5.8 percent lower in San Francisco, a savings of $266 per month on the median home, and 4.2 percent lower in Los Angeles County, savings of $124 per month.

DENSITY DEFICIT

Comparing California neighborhoods (census tracts, technically) to neighborhoods of similar density and demand around the United States reveals that California has large housing growth deficits in its least and most dense areas. These growth deficits are based on comparing the average rate of growth in each California neighborhood to a matched neighborhood in a pool of comparison regions. Deficits in the least dense areas are unsurprising: the geography of California's rural areas

is naturally less conducive to building than the US average, and the state has strict environmental regulation. But the growth deficit in dense neighborhoods is surprising. Rather than encouraging infill development in urban and dense suburban neighborhoods, California institutions have stifled it. In mid-density suburban neighborhoods, on the other hand, California has built about as much as comparable neighborhoods elsewhere in the United States.

Splitting California's neighborhoods into 10 categories with equal numbers of homes in 2012, one finds the following growth deficits through the end of 2017:

Table 1. California's Density Deficit

HOMES ORDERED BY DENSITY	DEFICIT
Least dense decile	36,000 homes
Second decile	41,000 homes
Third decile	22,000 homes
Fourth decile	3,000 homes
Fifth decile	500 homes
Sixth decile	6,000 homes
Seventh decile	700 homes
Eighth decile	21,000 homes
Ninth decile	46,000 homes
Most dense decile	23,000 homes

LIKELY IMPACT OF SB 827

The California Senate is considering proposed legislation, SB 827, that would preempt local zoning ordinances in order to allow property owners greater latitude to meet demand by building denser housing near public transit corridors. In a recent policy brief for the Mercatus Center at George Mason University, Emily Hamilton and I discuss the provisions of the bill and the principles that should guide state policymakers in the delicate matter of preempting local law.[1]

In order to evaluate the potential impact of SB 827, which would upzone transit-rich (and thus usually high-density) parts of the state, I use a set of similar US regions as a comparison group. In the spirit of the synthetic control method, the selection of a donor pool of potential comparison neighborhoods "requires some care."[2] The comparison regions are subjectively chosen as places that have prioritized infill development, have cities hemmed in by mountains and ocean, and experience high-enough demand growth to provide good neighborhood-level matches for California. Neighborhoods from the comparison group that are not comparable to an impacted California neighborhood in density or demand growth do not contribute to the counterfactual.

The comparison group includes Colorado, Oregon, Utah, Washington, the Miami metro area, and the Washington, DC, metro area. Cities in these regions have much stricter zoning than say, Texas, but have still sought to accommodate urban demand, and many of them have done so in a fashion that is comparable to SB 827. Seattle has designated *urban villages* to grow denser than the surrounding single-family neighborhoods. DC and some of its suburbs have generally permitted growth in transit-served areas while blocking density in most other neighborhoods. The comparison group has been more accommodating of growth than the country as a whole, so California's growth deficits (shown in table 2) appear larger than when comparing California to the entire country, as in table 1. However, the qualitative result—California's lack of growth in its densest areas—is true for both comparisons.

How many more units would California's impacted counties have built, and how much lower would rent be now, if SB 827 had been in effect over the last six years?

Table 2. Likely Impact of SB 827 If Adopted in 2012

COUNTY	NUMBER OF ADDITIONAL NEW HOMES	MEDIAN MONTHLY RENT SAVINGS
Alameda	21,000 homes	$182
Contra Costa	5,100 homes	$175
Los Angeles	105,700 homes	$124
Marin	1,100 homes	$271
Orange	14,100 homes	$128
Sacramento	7,900 homes	$29
San Diego	13,900 homes	$53
San Francisco	24,900 homes	$266
San Mateo	10,600 homes	$255
Santa Clara	7,500 homes	$71
Sonoma	3,300 homes	$78
Stanislaus	1,700 homes	$21
Yolo	500 homes	$34

To summarize, table 2 relies on the following assumptions:

1. Only tracts in the top half of the density distribution are affected.
2. Rental housing has a price elasticity of −2/3, which means that an increase of 2 percent in housing units corresponds to a drop of 3 percent in rent.[3]
3. Metropolitan areas are the relevant housing markets.
4. I used Sasha Aickin's map and recent amendments to SB 827 to inform my choice of which counties to present.[4]

HOUSING AND DENSITY DATA

For quantities demanded and supplied, I use the US Department of Housing and Urban Development (HUD) Aggregated USPS Administrative Data on Address Vacancies. Since 2005, the US Postal Service has shared its administrative tabulations of postal addresses with HUD. These tabulations are published quarterly. Addresses are tabulated by type of use (residential, business, or other) and by type of occupancy (occupied, vacant, or no-stat).[5]

For the final quarter of 2017, the data contain 130 million residential addresses, 9.7 million business addresses, and 6.5 million other addresses.[6]

To compute tract density, I inflate business addresses by a factor of five, reflecting the generally larger size of businesses relative to homes. The results are robust to different choices of inflation factor.[7]

RENT DATA

For price data, I use the Zillow Rent Index (ZRI), which is published monthly as a three-month moving average at the zip code level. The ZRI is the median of a frequently updated prediction of every housing unit's market rental value, designed to minimize prediction error. Thus, even homes that are never rented are included in the index. Compared to a repeat rent index, Zillow's approach is more sensitive to changing composition in an area but less sensitive to the changing composition of units on the market at any given time. In any case, as economists Brent Ambrose, N. Edward Coulson, and Jiro Yoshida explain, repeat rent indices are not available for narrow geographies.[8] Zillow also provides home-price and home-price-per-square-foot indices, which I use for robustness checks.[9]

CONCLUSION

California has failed to build new housing in dense areas even as demand to live in its denser metropolitan areas has surged. Some of the results of this failure have been housing unaffordability, population displacement, and exclusion of low-income people from the most desirable and job-rich areas.

Using a neighborhood-level comparison approach, I estimate that urban and suburban California counties would have allowed tens of thousands more homes to be built in already-dense neighborhoods if growth-accommodating rules such as those proposed in SB 827 had been in effect over the past six years. Applying two further assumptions in the context of a commonly used model of urban growth, one can estimate how much of an impact such a policy would have had on rent.

In San Francisco, monthly rent on the median home would be $266 lower per month. Rent in Los

Angeles would be $124 lower per month. SB 827 would lower rent by allowing California builders to meet some of the state's high demand for housing.

ABOUT THE AUTHOR

Salim Furth is a senior research fellow for the State and Local Policy Program at the Mercatus Center at George Mason University. He studies regional, urban, and macroeconomic trends and policies. Previously, he has worked at the Heritage Foundation and Amherst College. He is a graduate of the University of Rochester, where he studied economics.

NOTES

1. Emily Hamilton and Salim Furth, "California Can Improve Housing and Transit by Preempting Local Ordinances" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, March 2018).

2. Alberto Abadie, Alexis Diamond, and Jens Hainmueller, "Comparative Politics and the Synthetic Control Method," *American Journal of Political Science* 59, no. 2 (April 2015): 500. To be clear, this brief does not employ the synthetic control method.

3. A price elasticity of −2/3 is a customary assumption in the literature. See David Albouy, Gabriel Ehrlich, and Yingyi Liu, "Housing Demand, Cost-of-Living Inequality, and the Affordability Crisis" (NBER Working Paper No. 22816, National Bureau of Economic Research, Cambridge, MA, November 2016).

4. Sasha Aickin, "What Would SB 827 Really Look Like?," accessed April 11, 2018, https://transitrichhousing.org/; Scott Wiener, "SB 827 Amendments: Affordability, Transit Lines, Height, Ellis Act Protections & More," *Medium*, April 11, 2018.

5. The no-stat category is not clearly defined, but it appears to include post office boxes, houses under construction, and a large share of addresses in vacation towns. I find that subtracting no-stats from the totals leads to a closer match with the census housing totals in 2010. Investigating one city (Seattle) in detail, I found large, sudden changes in the number of no-stat addresses that occurred mainly in census tracts containing a post office. Large drops in one post office tract's no-stats were matched by large increases in another, nearby post office tract. These patterns suggest that excluding no-stats leads to a closer correspondence between postal addresses and residential units.

6. The category "other" presents another interpretive challenge: the largest concentrations of other addresses occur in a few centers of government employment and colleges. A cross-sectional regression of the number of "other" addresses on the number of residential and business addresses has an R-squared value of 0.22, which suggests that a census tract has an additional other address for every 3 business addresses and for every 42 residential addresses.

7. The density of residential addresses is positively related to the density of nonresidential addresses (correlation coefficient is 0.68), and unweighted density is correlated at 0.95 with density as I compute it.

8. Brent W. Ambrose, N. Edward Coulson, and Jiro Yoshida, "The Repeat Rent Index," *Review of Economics and Statistics* 97, no. 5 (2014): 939–50.

9. Additional Technical Notes:

   Because prices are available by zip code but not by census tract, I use the geographical correspondence files provided by HUD to map prices from zip codes to census tracts. In urban areas, a zip code contains roughly five census tracts, and their boundaries are not coterminous. Even worse, zip codes are not completely stable in their boundaries. The correspondence files are based on the share of each tract's addresses that are in each zip code. Thus, a researcher cannot easily distinguish between a case where new construction is concentrated in one zip code of a split census tract and a case where construction is split between the two but part of the tract is reassigned from one zip code to

another. In practice, though, a large share of the quarterly shifts in how many addresses of a tract are in one zip code versus another zip code appear to be a result of footloose no-stat addresses. HUD and USPS could improve this data source by creating correspondence files based only on occupied and vacant addresses (i.e., not no-stat ones).

I take three steps to minimize noise in the mapping. First, I use data only from Q1 2012 onward, avoiding a major realignment of zip codes that took place between Q4 2011 and Q1 2012. Second, I average across all available quarters to create a single, invariant crosswalk. Third, I use an algorithm to identify tracts with large zip code shifts that cannot be accounted for by no-stats and assign them no price data. This shrinks my sample by about 5 percent. Growth patterns in excluded tracts do not appear to differ substantially from nearby, included tracts.

Finding a virtue in necessity, the zip code rent index mitigates the bias because of composition changes in individual tracts. Furthermore, zip-level rent changes are highly correlated with metro-area changes, consistent with the view that metro areas can be thought of as coherent housing markets.