

John Randolph Haynes and Dora Haynes Foundation

Research Project

Final Report

**Housing Interconnections in Los Angeles:
Shortages, Affordability, and Displacement**

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This Final Report to the project “Housing Interconnections in Los Angeles: Shortages, Affordability, and Displacement” summarizes the key findings and contributions worked out in the set of accumulated research products. These products are available for public view on the project website: <https://sites.usc.edu/popdynamics/haynes/> A set of titles and completion dates is provided below in the Appendix.

The research project pursued two overarching goals. The first was to provide an accessible overall explanation and visualization about how the housing stock in Los Angeles is matched to the changing population. The aim was to provide a common framework as a backdrop for understanding, and debating, both problems and solutions of housing.

The second broad goal was to develop an understanding of housing in Los Angeles that is based on the interconnections in its changing housing and population, rather than seeing this as a set of isolated problems and separate interest groups. Crucial interconnections need to be spotlighted between owners and renters, between new and old housing, between different price brackets in the housing stock, and not least among the many distinct population subgroups that share the use of our accumulated housing stock. The many interconnections transmit repercussions of excess or shortage, and of high price, throughout the market, connecting the housing fates of different population groups.

ACHIEVEMENTS

The theme of interconnections leads to many cross-cutting issues and some ambiguities. Research on this trail also exposed some major contradictions and deficiencies in measurement systems. Three technical issues which have particularly profound effects have been fruitfully resolved with useful procedures and findings. As these proved vital for sorting out interconnections, we summarize these breakthroughs first.

Technical Resolutions

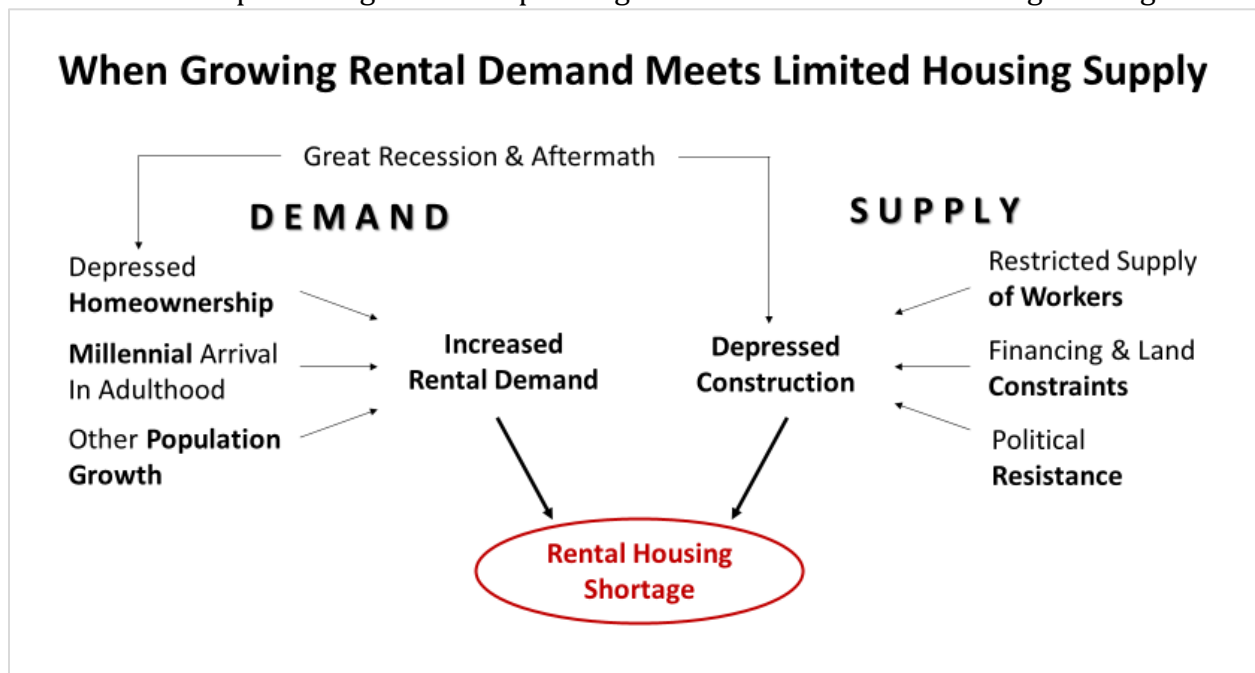
Shortages constrain observed households. The definition of a household is people living in an occupied housing unit, but when units are in short supply, not all potential households can be observed living in an occupied unit. Accordingly, existing data about the number of households (or categories by income, age, or race) cannot count all the households of a potential type. In particular, the number of households in stress is undercounted because the data are censored in quantity by the shortage of housing. Accordingly, we have developed indirect methods to measure what is not directly visible. (Illustrated in the section on “shortages” to follow.)

Rental affordability problems curtail the number of renters with affordability problems. This tautology results from the fact that households too poor to afford the rent are made to give up their households and disappear from the data. Thus, under severe conditions of rising rents, the number or percentage of renters with excess rent burdens may decline. In practice we show that rent burden is surprisingly similar across the nation, because in the hard-hit areas many renters drop out of the housing market. As a result, rent burden in San Francisco, for example, is lower than in Los Angeles and even lower than the national average. What then can the percentage with a rent burden tell us about the local severity of

problems? Solving this problem led to invention of the “constant quartile” method that HUD published in March 2019 in their *Cityscape* journal. (This is explained below in the “affordability” section.)

The Great Recession synchronized problems nationwide and between different housing sectors. At the same time as the number of homeowners plummeted after 2007, the number of renters increased, which elevated rental competition and drove up rents. In the same time period, by coincidence, the peak of the large Millennial generation reached age 27, but could not advance to owning, also swelling demand among renters nationwide. However, at the same time the financial crisis that triggered the Great Recession also disrupted housing construction, thereby preventing supply from rising to meet demand, and thus also driving up rents. (Political resistance to new construction was a further complication.) These widespread trends of the post-recession era, and the consequent lowering of national benchmarks, make it difficult to show the relative stress increase in any particular metro area. We have been using the following succinct diagram to summarize the interacting elements that spawned the housing crisis:

Exhibit 1. Conceptual Diagram for Explaining the Context of Rental Housing Shortage



How Great are the Housing Shortages in California and LA?

A key objective of the project is to quantify the extent of the housing shortages and to make these believable to the public and decision makers. In the midst of our project the gubernatorial campaign brought the housing crisis to greater prominence, when both Villaraigosa and Newsom seized on an estimate by McKinsey and Co. of 3.5 million housing unit shortfall in California. (Neither offered an estimate specific to LA county, so the debate

turned solely on the California total.) Although we had already been developing working papers on affordability and dislodgement, we made this question of California housing shortage the topic of our first Haynes Housing research brief. We found the McKinsey estimate to be too high and not defensible. Although it is a population-based method, it does not disaggregate by age group and it is based in part on New York and New Jersey data, not solely California.

Population-Based Method

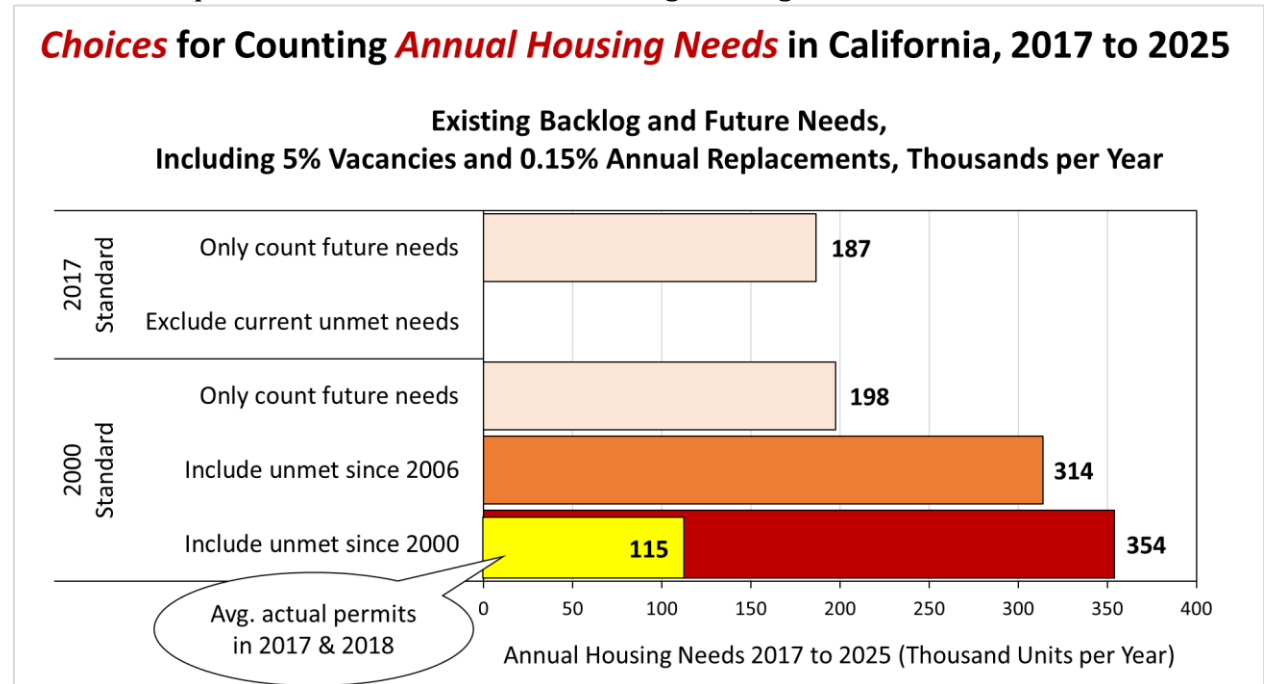
We have devised two methods for estimating shortages, one population-based, the other jobs-based. Our population estimate uses headship rates with age groups from 2000 to 2025. We find the number of unhoused, potential households in California (existing unmet needs and projected growth to 2025) is 2.5 million, or 2.8 million if counting added vacancies and replacements needed in the total stock. What is most confusing to people is the vaguely stated time frame involved in calculating these housing needs (current needs beginning from 2000 or 2006, versus needs of future growth to 2025, or both combined). Our brief sorted that out quite specifically, allowing for choice of different time options. That yielded a final summary graph to show our alternative estimates, annualized so that they can be compared to each other and to current rates of housing construction. Results for California and Los Angeles are on the next page (Exhibits 2 and 3).

Jobs-Based Method

An alternative approach to estimating housing needs is based on the normal amount of housing expected to be added in conjunction with faster or slower economic growth, expressed as the annual rate of job growth. A comment widely made is that Los Angeles or California is adding only one housing units for every 6 or 7 jobs. However, a faster than normal rate of job growth is expected as a rebound after the steep decline during the Great Recession. Or before that, greater than normal housing may have been produced during the housing bubble of the boom years in the early 2000s. What is the normal rate of job growth and an appropriate volume of new housing differs each decade and remains uncertain.

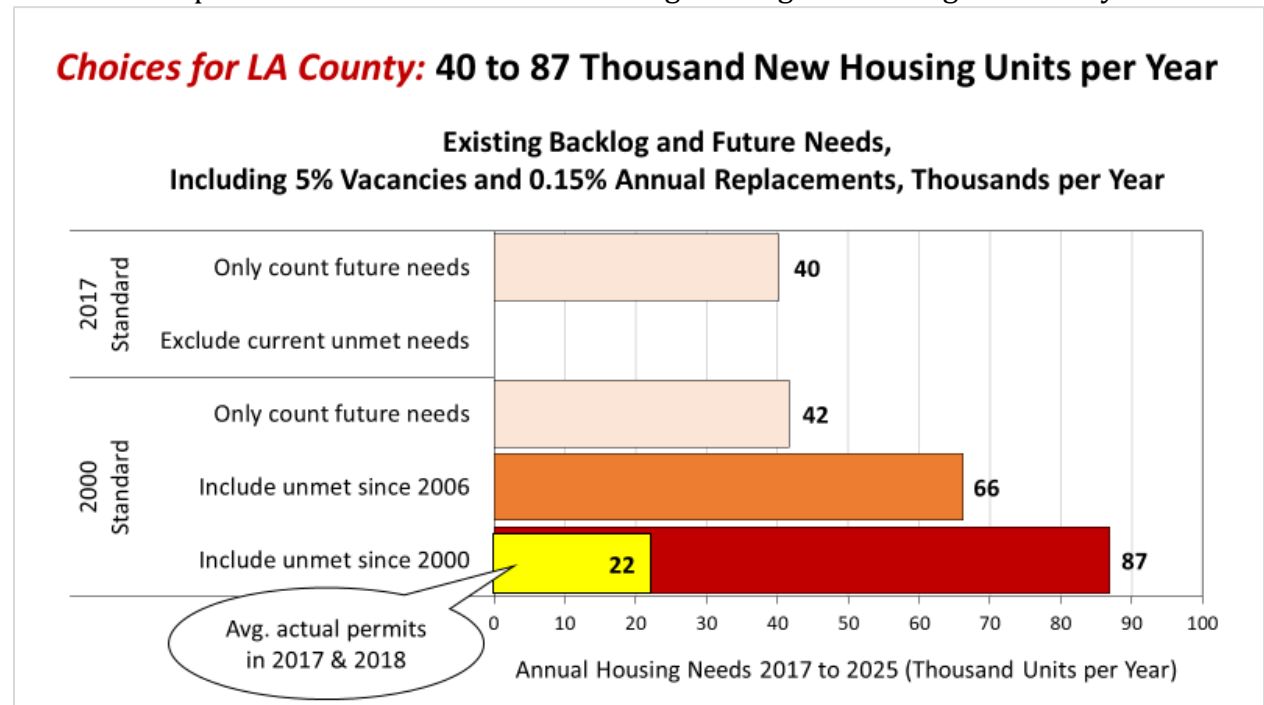
Our solution is to estimate this relationship separately in each time period, comparing the rate of housing growth to job growth for LA in comparison to other large metros. Following is a chart relating housing and job growth in separate plots for five distinct periods (Exhibit 4): the 1980s, 1990s, and the pre-recession boom period of 2000-2007, followed by a recession period of 2008-2011 and the recovery period between 2012 and 2017. In most cases housing permits for new construction in the LA metro lie well short of what is expected by the regression trend line that equates permits to job growth. Comparing the recovery period to pre-recession boom periods, most of the metros, as well as the regression line linking permits to jobs, fall far lower. Elevating LA's housing construction to the average level *of the recovery period* would only partially address the unmet housing needs. Instead, we use the regression relationship *of the earlier periods* to estimate the amount of housing truly needed in the recent period. Details of the method are provided in the HRB 6 report.

Exhibit 2. Population-based Estimate of Housing Shortage in California



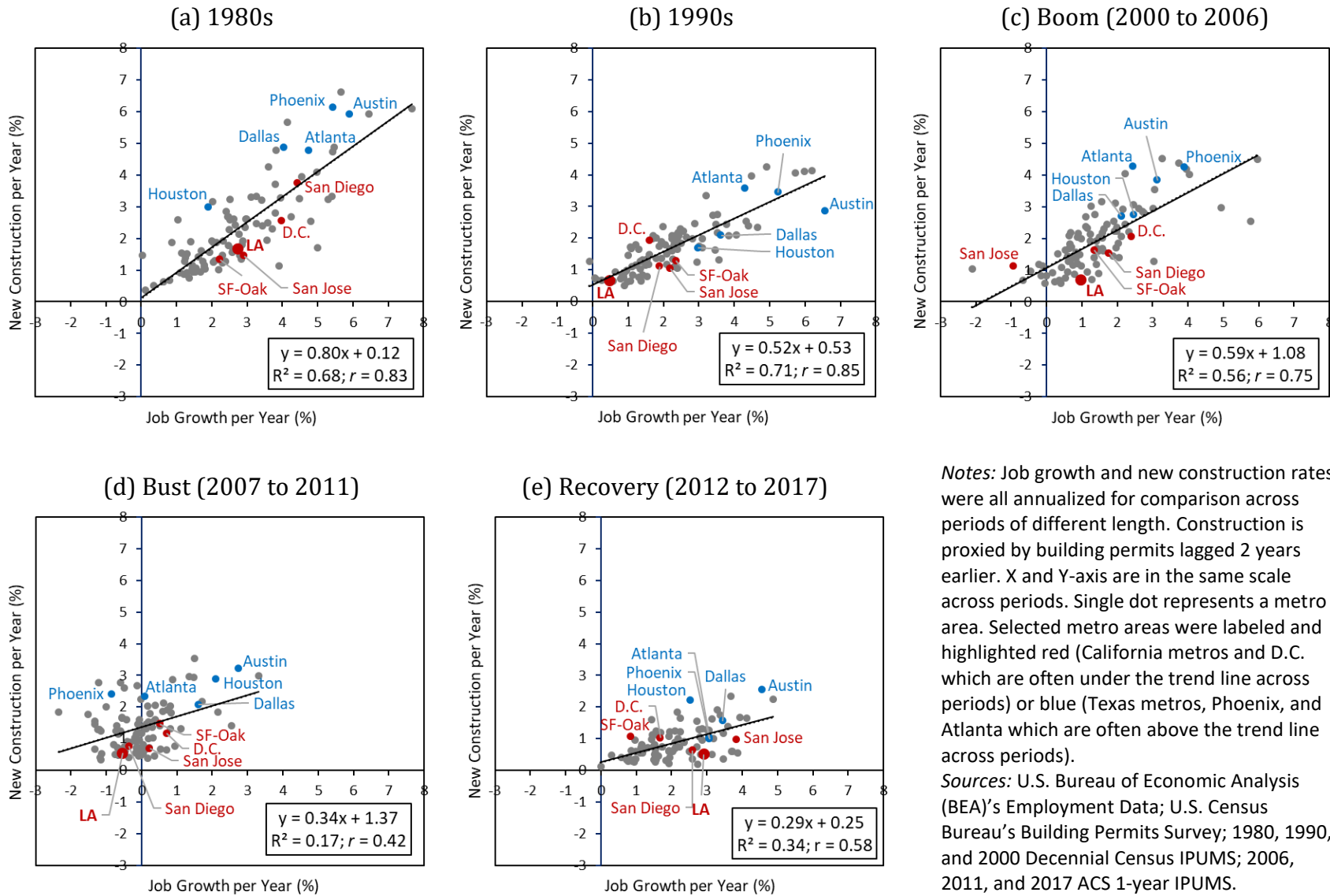
Sources: U.S. Census Bureau’s Building Permits Survey; 2000 Decennial Census and 2006 through 2017 American Community Survey IPUMS Files; California Department of Finance (DOF)’s Population Projection (March 2019 ver.)

Exhibit 3. Population-based Estimate of Housing Shortage in Los Angeles County



Sources: U.S. Census Bureau’s Building Permits Survey; 2000 Decennial Census and 2006 through 2017 American Community Survey IPUMS Files; California Department of Finance (DOF)’s Population Projection (March 2019 ver.)

Exhibit 4. Relations Between Annualized Job Growth and New Construction, 100 Largest Metropolitan Areas

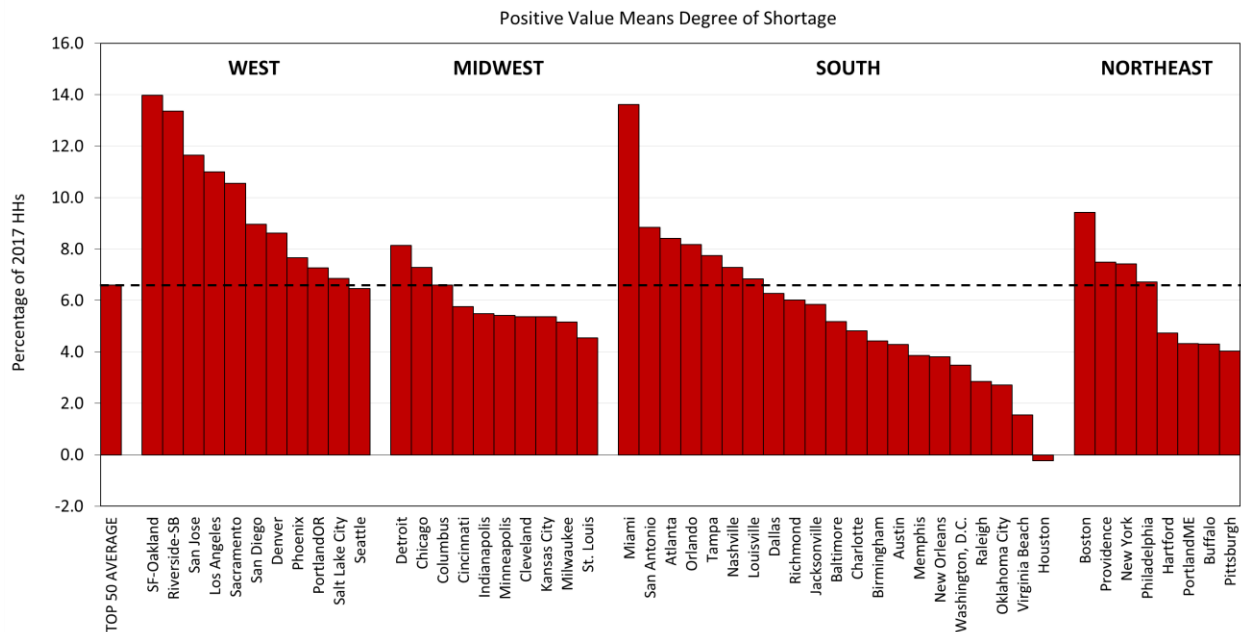


Notes: Job growth and new construction rates were all annualized for comparison across periods of different length. Construction is proxied by building permits lagged 2 years earlier. X and Y-axis are in the same scale across periods. Single dot represents a metro area. Selected metro areas were labeled and highlighted red (California metros and D.C. which are often under the trend line across periods) or blue (Texas metros, Phoenix, and Atlanta which are often above the trend line across periods).

Sources: U.S. Bureau of Economic Analysis (BEA)'s Employment Data; U.S. Census Bureau's Building Permits Survey; 1980, 1990, and 2000 Decennial Census IPUMS; 2006, 2011, and 2017 ACS 1-year IPUMS.

From these jobs-housing relationships, we estimate housing needs for all the largest metros in the recovery period in the same fashion (Exhibit 5). These estimates do not include shortages accrued in the recession or before; however, just in this recent period shortages in Los Angeles are equal to 11 percent of households. By this method we find the greatest housing shortages are in California, along with Miami and one or two other places.

Exhibit 5. Degree of Housing Shortage Relative to Job Growth, 50 Largest Metropolitan Areas, 2011 to 2017



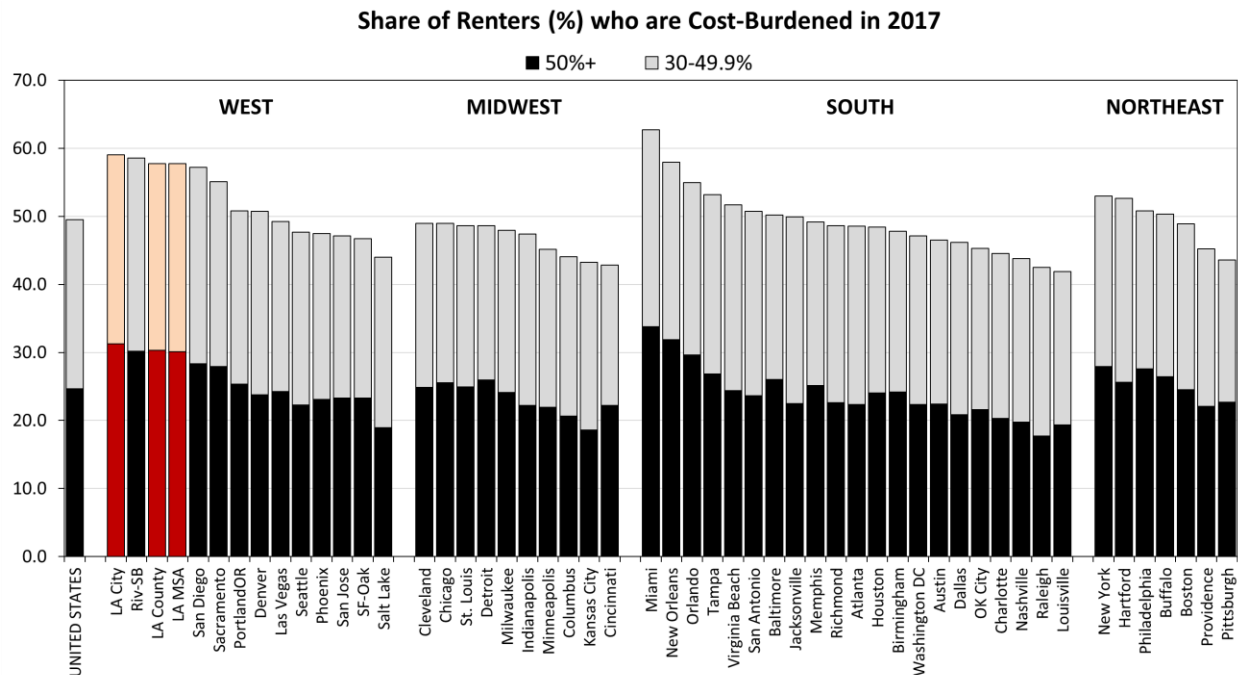
Notes: Based on Normal Relationships between Job Growth and Permits from 1980 to 2006.

Sources: U.S. Bureau of Economic Analysis (BEA)'s Employment Data; U.S. Census Bureau's Building Permits Survey; 1980, 1990, and 2000 Decennial Census IPUMS; 2006, 2011, and 2017 ACS 1-year IPUMS.

How Severe is the Affordability Problem for Los Angeles?

Affordability problems emerge from the overall shortages, ratcheting upward with each economic cycle, as employment and potential household growth surges, because new construction and overall supply rise more slowly than required by growth. The traditional method counts the incidence of excessive rent burden—the share of renters who pay more than 30% (or more than 50%) of their income on rent. We find that Los Angeles (and all of southern California) has among the highest incidence of excessive rent burden, surpassed only by Miami (Exhibit 6).

Exhibit 6. Share of Renter Households Who Are Cost Burdened, United States, the Largest 50 Metropolitan Areas, and Los Angeles City and County, 2017



Sources: 2017 American Community Survey IPUMS Microdata files (Ruggles et al., 2019).

We began to discover, however, that this well-accepted method is packed with flaws that have gone unquestioned. Our Haynes research probed deeper, and our HRB 3 brief expanding into a fully refereed article that was published in March 2019 in the HUD-sponsored journal, *Cityscape: A Journal of Policy and Development*. We are pleased to have our work vetted in this journal because HUD is the central meeting place where indicators of housing quality are evaluated and deployed. The *Cityscape* journal is also open access, facilitating public knowledge and use.

One fault we point out in the traditional rent burden indicator is how little it varies between metros. Most metros are within a few percentage points of the national average incidence for excessive rent burden, 47.5%. Also, another question is why is it that severe burden (paying more than 50% of income for rent) is not more prevalent in some metros where the affordability problems are more extreme? Instead, the incidence of extreme burden is roughly half of total rent burden in every metro.

We also note some curiosities like San Francisco and San Jose having an incidence of excessive rent burden that is *lower* than the national average. This can't mean that rent is more affordable in the Bay Area than the national average, can it? This anomaly exposes an underlying fault of the rent burden indicator, namely that it cannot distinguish between cases where rents are too high or, on the other hand, where it is incomes that are too low. The Bay Area happens to have higher income renters who are better able to carry the higher rents, so their affordability problems appear less.

The new “constant quartiles mismatch” method we propose measures rent and income distributions in a base year (2000), dividing each into quartiles arrayed from highest to lowest. By definition the 25% renters with the highest incomes are in the top income quartile and the 25% of rents with the highest monthly costs are in the top rent quartile. We carry out this procedure for the second, third and fourth (bottom) quartiles, identifying the income and rent breakpoints that divide the distribution into each quartile. Then we make the comparison with current incomes and rents by updating the 2000 breakpoints for inflation, and then assigning 2017 renters into the constant-defined quartiles. (Details of the method are explained in the *Cityscape* article of HRB 3.)

Results are stunning. The current incomes fit well into the old quartiles with very little adjustment. But the current rents have shifted tremendously upward. Results are presented first for the United States in the top panel of Exhibit 7. Between 2000 and 2017 the incomes of renters shifted with 27% in the top quartile, with a corresponding loss from the second to top quartile. In terms of rent, however, fully 40% of renters now are paying rents that formerly were paid only by the top 25%. The largest corresponding loss is in the bottom quartile of rents, which shrank to 17%, even while the bottom quartile of incomes held steady at 25%. This is a substantial mismatch between incomes and rents at both the top and bottom of the distribution.

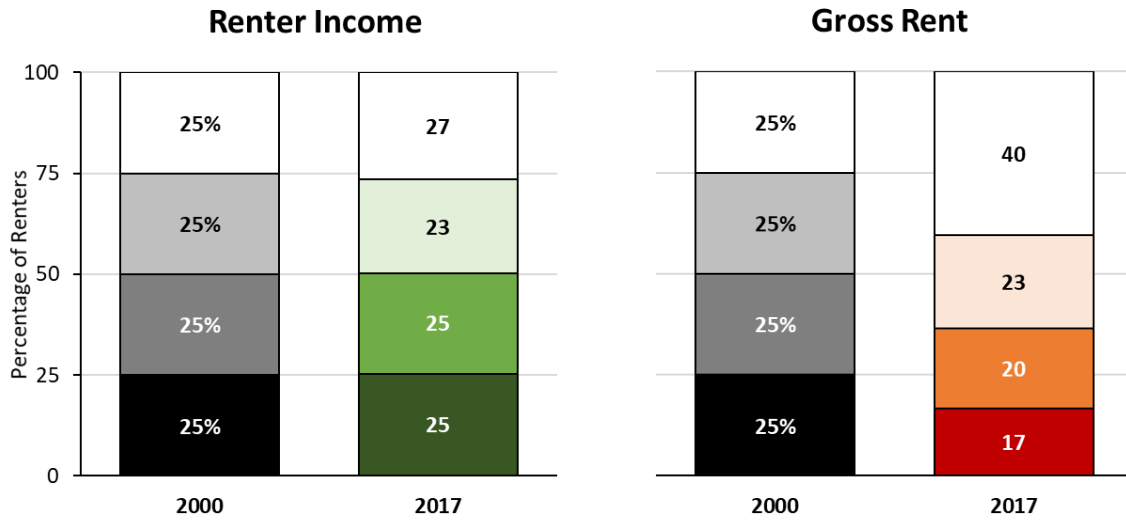
Turning to Los Angeles (lower panel of Exhibit 7), we find an even greater shift. Incomes have bulged upward by a notable 6 percentage points, but rents have increased in the top quartile by 32 percentage points—5 times as much. Fully 57% of renters in Los Angeles now are paying rents in the top quartile, or said differently, *well over half the renters in Los Angeles are paying top drawer rents* that formerly were carried only by the top 25%.

Our published work in *Cityscape* provides similar analysis for 9 other large metros, starting with San Francisco and San Jose, and continuing to Detroit and Atlanta. Every metro exhibits a different pattern of income change in the top and bottom quartiles, combined with rent shifts at the top and bottom. See the published exhibit linked here: https://sites.usc.edu/popdynamics/files/2019/10/Ex_7.pdf

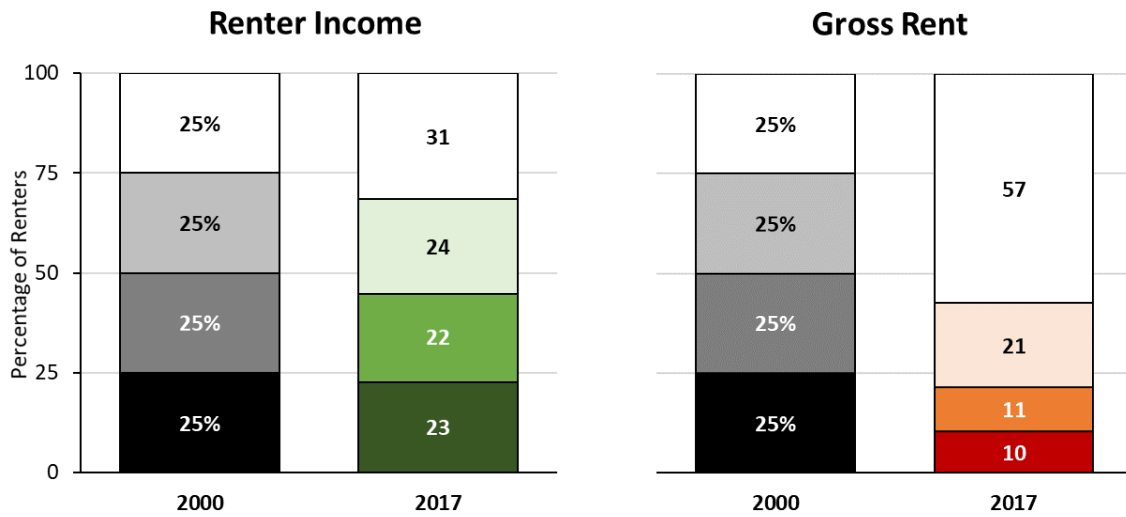
The least affordable metro for renters overall, where the stress of rising rents was more mismatched with any income gains among renters, was determined to be Washington, D.C., which like San Francisco, also had relatively low rent burden and so looked peacefully more affordable on the traditional measure.

Exhibit 7. Quartile Distribution of Renter Households by Income and Rent, Under Inflation-Adjusted Constant Quartile Breaks, 2000 and 2017, United States and Los Angeles County (unit: percentage share)

(a) United States



(b) Los Angeles County



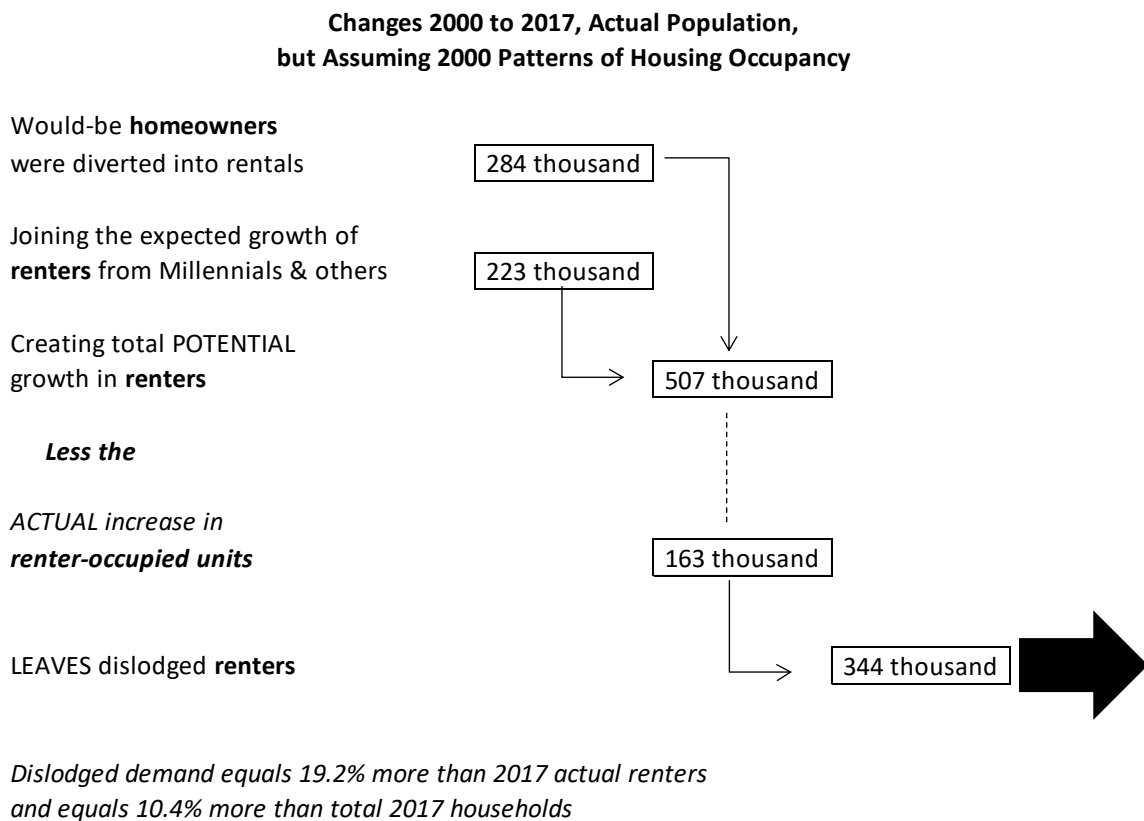
Notes: Percentages may not add to 100 due to rounding at the first decimal place.

Sources: 2000 Decennial Census and 2017 American Community Survey IPUMS Microdata files (Ruggles et al., 2019).

How Many Households are Dislodged by Shortage and Affordability?

Below is the summary cascade model we have developed. Normal growth is housing demand of Millennials and others was added to renters, plus diverted, would-be homeowners were added to renters, but when the total expected renters are compared to the actual growth in occupied rental units, something has to give. A third of a million renters (19.2% of renters) have been dislodged since 2000 relative to the number that would have been expected in 2017 based on the actual population in the county.

Exhibit 8. The Cascade of Diverted Homeowners and Dislodged Renters, Los Angeles County, 2000 to 2017



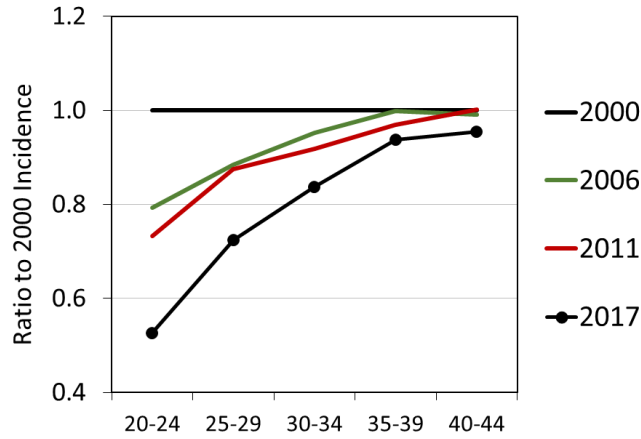
Sources: 2000 Decennial Census; 2017 American Community Survey IPUMS Microdata files.

How can we know this? Our model is based on population residing in LA County and applying the normal headship rates (percent of age group that heads an independent household) to the population numbers in each age group. We also use the change in the percent who are homeowners to reveal the extra number of renters converted from the diverted (would-be) homeowners. Not accounted for are the thousands of people who migrated away from LA or who were blocked from arriving.

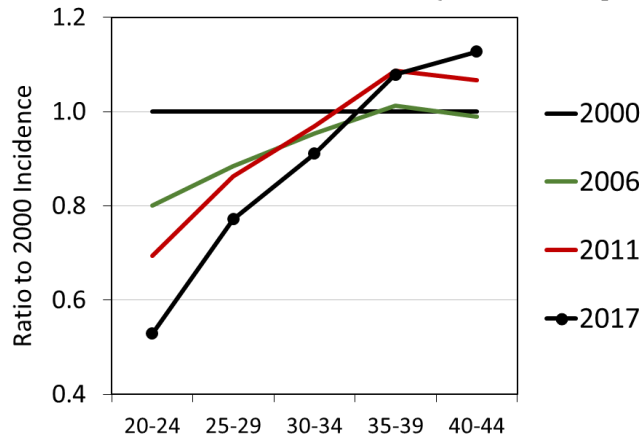
Who is it who gets squeezed out and is made to disappear from household headship? Headship contracts the most for the youngest would-be household heads (Exhibit 9).

Exhibit 9. Proportional Changes since 2000 in Housing Occupancy (Headship per Capita) by Age, Los Angeles County, 2000, 2006, 2011, and 2017

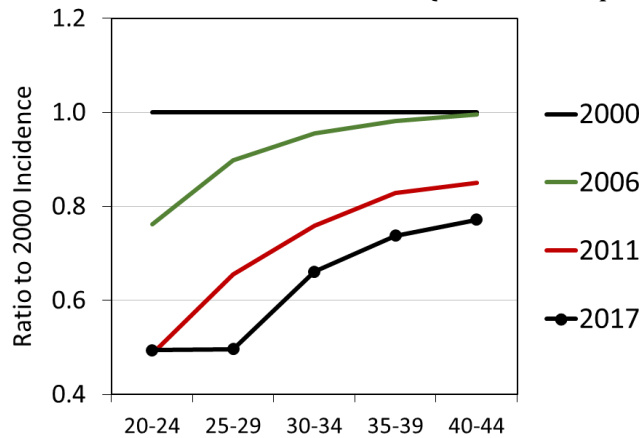
(a) Total Household Formation (HHs per capita, by age)



(b) Formation of Renter Households (renter HHs per capita, by age)



(c) Formation of Owner Households (owner HHs per capita, by age)



Notes: The vertical axis is scaled as proportional to the base year *per capita* rate (2000 = 1.0).

Sources: 2000 Decennial Census; 2006, 2011, and 2017 American Community Survey IPUMS Microdata files.

In general, it seems that the lower income households are the ones most likely dislodged. (Again the problem is that once made to dissolve, those households cannot be interviewed to learn what was their income.) An indirect reflection of this winnowing process that dislodges the economically weakest households is seen in the declining household formation rate in metros that have a greater share of renters suffering high rent burden. The correlation between headship rates at age 25-34 (the age where household formation first happens) and rent burden in the same age group is strongly negative: -0.60 .

Final Summary of Accomplishments

This final project report has overviewed the achievements enabled by the kind and generous support of the Haynes Foundation. A review of some of the main findings was preceded by a summary of three technical innovations that were required to make progress in this complicated topic area. The formation and disappearance of households truly muddies the measurement of problems that are the cause of the disappearance. Equally important are the complex interconnections among key aspects of the housing crisis, which makes diagnosis and prescription difficult to decipher and explain. More work is certainly required, and yet this project has made substantial progress that we hope to continue to develop and share in further briefings and publications.

The percentage housing shortages in Los Angeles are among the most dire in the nation and shortages here are the largest in total volume. Massive solutions will be required, but for that we will need to share essential knowledge with leaders and the public at large who must come together to back key actions. Our work has begun to get an airing, but sustained discussion is going to be required.

The Appendix that follows provides links to all our research products and lists the many presentations and media appearances that the project has achieved. Hopefully many more beneficial impacts will follow.

APPENDIX

Appendix A. List of Research Products

A. Journal Article

- Paper 1 Myers, D., & Park, JH. (2019). A Constant Quartile Mismatch Indicator of Changing Rental Affordability in U.S. Metropolitan Areas, 2000 to 2016. *Cityscape: A Journal of Policy Development and Research*, 21(1), 163–200.
<https://www.huduser.gov/portal/periodicals/cityscpe/vol21num1/ch7.pdf>

B. Housing Research Briefs (HRBs)

- HRB 1 Myers, D., Park, JH., & J. Li. (August 2018). *How Much Added Housing is Really Needed in California?* Housing Research Brief 1. Los Angeles, CA: USC Population Dynamics Research Group. <https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/210/files/2017/02/HRB-1-How-Much-Added-Housing-is-Really-Needed-in-California-1okfauc.pdf>
- HRB 2 Myers, D., Park, JH., & E. Mendoza. (August 2018). *How Much Added Housing is Really Needed in Los Angeles?* Housing Research Brief 2. Los Angeles, CA: USC Population Dynamics Research Group. <https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/210/files/2017/02/HRB-2-How-Much-Added-Housing-is-Really-Needed-in-Los-Angeles-1zumxf6.pdf>
- HRB 3 Myers, D., Park, JH., & E. Mendoza. (September 2018). *How Much Worse is Affordability in LA than Before?* Housing Research Brief 3. Los Angeles, CA: USC Population Dynamics Research Group. <https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/210/files/2017/02/HRB-3-How-Much-Worse-Is-Affordability-in-LA-than-Before-x09qkr.pdf>
- HRB 4 Myers, D. & JH. Park. (January 2019). *Who Lives in New Housing in Los Angeles?* Housing Research Brief 4. Los Angeles, CA: USC Population Dynamics Research Group. <https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/210/files/2019/01/HRB-4-Who-Lives-in-New-Housing-in-Los-Angeles-2ev2t3l.pdf>
- HRB 5 Park, JH. & D. Myers. (January 2019). *Where Do Low-Income Angelenos Live?* Housing Research Brief 5. Los Angeles, CA: USC Population Dynamics Research Group. <https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/210/files/2017/02/HRB-5-Where-Do-Low-Income-Angelenos-Live-1glbw1d.pdf>
- HRB 6 Myers, D. & JH. Park. (August 2019). *Do Shortages Lead to Dislodgment of Disappearing Renters in Los Angeles?* Housing Research Brief 6. Los Angeles, CA: USC Population Dynamics Research Group. <https://cpb-us-e1.wpmucdn.com/sites.usc.edu/dist/6/210/files/2019/08/HRB-6-How-Do-Shortages-Lead-to-Dislodgement-and-Disappearing-Renters.pdf>

HRB 7 **(In Progress)** Myers, D., Cho, S., & JH. Park. (October 2019). *Where Does Housing Demand Come from in Los Angeles?* Housing Research Brief 7. Los Angeles, CA: USC Population Dynamics Research Group.

C. Presentations

Academic Conferences

- October 2017 Myers, D. & JH. Park. *Displaced Demand and Housing Shortage: Hidden Effects and Large Underestimation, 2000 to 2015*. 57th Association of Collegiate Schools of Planning (ACSP) Conference. Denver, CO.
- October 2018 Myers, D. & JH. Park. *Millennials' Unbalanced Recovery from the Recession: Puzzles and Acceleration*. 58th ACSP Conference. Buffalo, NY.
- October 2018 Park, JH. & D. Myers. *Declining Access to Affordable Low-income Housing Due to Middle-Class Competition: Evidence from U.S. Metropolitan Areas, 2006 to 2016*. 58th ACSP Conference. Buffalo, NY.
- April 2019 Myers, D. & JH. Park. *Application of the Constant Quartile Mismatch Indicator of Changing Rental Affordability in U.S. Metropolitan Areas*. 49th Urban Affairs Association (UAA) Conference. Los Angeles, CA.
- April 2019 Myers, D. & JH. Park. *Housing Shortage, Filtering, and Low-income Housing Opportunities*. 49th UAA Conference. Los Angeles, CA.
- October 2019 Myers, D. & JH. Park. (Scheduled). *A Constant Quartile Mismatch Indicator of Changing Rental Affordability: Concept, Practical Uses, and Determining Factors*. 59th ACSP Conference. Greenville, SC.
- October 2019 Myers, D. & JH. Park. (Scheduled). *Filtering of Apartment Housing, New Construction, and Lower-income Housing Opportunities*. 59th ACSP Conference. Greenville, SC.

Professional Meetings and Conferences

- August 2017 Myers, D. (August 2017). *Demographic Waves, Demand, and Housing Shortage*. Urban Land Institute. Washington, D.C.
- March 2018 Myers, D. (March 2018). *Millennials' Recovery from the Recession: Demographics Meets Economics*. Building Industry Association of Southern California–Los Angeles/Ventura. Los Angeles, CA.
- June 2018 Myers, D. & JH. Park. (June 2018). *New Evidence of Growing Millennial Housing Demand Amid Housing Shortage and Dislodgment in Los Angeles*. 29th Annual USC-SCAG Demographic Workshop. Los Angeles, CA.

- Sept. 2018 Myers, D. (Sept. 2018) *Demographics of Housing Shortage*, Real Estate Summit, California Association of Realtors.
- March 2019 Myers, D. *Solving the Puzzle of Millennial Lags in Homeownership Rates*, seminar for the Office of Policy Development Research, HUD building, Washington, DC.
- March 2019 Myers, D. & JH. Park. *New Evidence of Housing Shortage and Dislodgment in Los Angeles Why So Bad and What Solutions Can Restore Normalcy?* Urban Growth Seminar at the USC Sol Price School of Public Policy. Los Angeles, CA.
- June 2019 Myers, D. & JH. Park. (June 2019). *Growing Housing Needs Amid the Shortage Crisis in California Regions*. 30th USC-SCAG Annual Demographic Workshop. Los Angeles, CA.
- June 2019 Myers, D. & JH. Park. (June 2019). *Changing Rental Affordability in California Regions: Application of the Constant Quartile Mismatch Indicator*. 30th USC-SCAG Annual Demographic Workshop. Los Angeles, CA.
- July 2019 Myers, D. (July 2019). *Population Impacts Analysis of Housing Shortage*. Stage-setting, keynote presentation for the BizFed/Milken Institute Gathering of Housing Experts & Stakeholders. Santa Monica, CA
- September 2019 Myers, D. *Demographic Connections in the Housing Crisis*. Context-setting presentation for the Housing Policy Discussion at the Quarterly Board Meeting of the Southern California Leadership Council, Los Angeles, CA.
- October 2019 Myers, D. (Scheduled) *Can Indirect Strategies Reduce Shortages, Restrain Housing Cannibals, and Promote Affordability?* Distinguished Public Lecture, San Francisco State University, on Market Street, San Francisco.

D. News Media

- March 2018 CityLab. Benjamin Schneider. (March 5, 2018). *In California, Momentum Builds for Radical Action on Housing*. <https://www.citylab.com/equity/2018/03/in-california-momentum-builds-for-radical-action-on-housing/554768/>
- July 2018 KPCC. (July 30, 2018). *Do housing costs deserve some of the blame for California's falling fertility rate?* <https://www.scpr.org/news/2018/07/30/85066/do-housing-costs-deserve-some-of-the-blame-for-cal/>
- October 2018 Slate magazine. Henry Grabar. (October 1, 2018). *What Makes Rent "Affordable"? America's Standard Metric Compares Rents to Incomes: That Doesn't Tell the Whole Story*. <https://slate.com/business/2018/10/rental-affordability-metric-complicated.html>
- December 2018 LA Times. (December 21, 2018). *Who moves to California? The wealthier and better educated, mostly*. <https://www.latimes.com/business/la-fi-california-census-migration-20181221-story.html>

- December 2018 KPCC. (December 27, 2018). *A Golden (State) Opportunity: census data reveals who is moving into -and out of- California.* <https://www.scp.org/programs/airtalk/2018/12/27/64032/a-golden-state-opportunity-census-data-reveals-who/>
- April 2019 USC News. Gary Polakovic. (April 30, 2019). *Lack of Affordable Rent Plagues Cities Across the United States.* <https://news.usc.edu/156366/affordable-rent-research-income-distribution/>
- April 2019 FOX2 KTVU. (April 30, 2019). *Rents are rising faster than incomes.* <http://www.ktvu.com/news/mobile-app-ktvu/study-rents-are-rising-faster-than-incomes>
- April 2019 Orange County Register. Jeff Collins. (April 30, 2019). *Southern California among nation's 5 least affordable rental markets.* <https://www.ocregister.com/2019/04/30/southern-california-among-nations-5-least-affordable-rental-markets/>
- May 2019 ABC7. Josh Haskell. (May 1, 2019). *SoCal residents face big gap between rent and income, USC study says.* <https://abc7.com/finance/study-social-cities-face-big-gap-between-rent-income/5279117/>
- May 1, 2019 NBC4. (May 1, 2019). *This New USC Study Says LA Isn't the Least Affordable Rental Market in the U.S., But It's Close.* <https://www.nbclosangeles.com/news/local/Study-LA-Fourth-Least-Affordable-Metro-Area-509309961.html>
- June 2019 LA Times Editorial. (June 21, 2019). *SoCal leaders either haven't gotten the memo on the housing crisis or don't care.* <https://www.latimes.com/opinion/editorials/la-ed-fair-share-housing-scag-20190621-story.html>

“On the campaign trail, Newsom said he wanted the state to build 3.5 million homes by 2025 to end the housing shortage. USC researchers said 2.5 million homes is a more accurate target. Even relying on USC’s more conservative housing goal, the SCAG region—which is home to half the state’s population—would probably need to build around 1 million comes over the coming years..... But the fight over the total amount of housing needed is really a fight for the future of California.”

E. Web Services

- Web 1 Open Public Access to USC Webpage for Haynes-Supported Housing Research. <https://sites.usc.edu/popdynamics/haynes/>