



Fannie Mae®

# The U.S. Housing Shortage from a Local Perspective



**Kim Betancourt,  
Stephen Gardner, and Mark Palim**  
October 2022



---

# Introduction

There is a broad, national consensus that the United States has a housing shortage. For decades, housing production and preservation has fallen short of what is needed to keep housing affordable — particularly for low- and moderate-income renters and homebuyers. Yet this consensus masks a deeper truth: All housing is local, and, in attempting both to understand and to meet the U.S. housing supply needs, one must look to local markets.

Estimates of the number of missing homes nationally vary widely. These estimates commonly suffer from two flaws. First, they are sensitive to the selection of the yardstick for what constitutes a “normal” or desirable number of homes. Second, variations in land usage, employment, and population trends across metropolitan areas, along with the long life of housing units relative to these other factors, result in meaningfully different housing stock and affordability challenges from state to state and metro area to metro area. Furthermore, there is the common belief that high and/or rising home prices and rents imply greater housing affordability challenges, which is not always the case.

To gain a better understanding of the local differences and commonalities of the nation’s housing affordability challenge, our analysis includes both renter and owner households who live in multifamily or single-family homes and reside in the 75 most-populous Metropolitan Statistical Areas (metro areas), which account for about 69% of the U.S. population<sup>1</sup>. We did not limit ourselves to traditional measures of housing affordability (e.g., cost-burdened households) that are generally point-in-time estimates. Instead, we used a wide range of data on employment, population, and housing to draw out differences and comparisons among these metro areas that better capture underlying dynamics driving affordability. This should make the results more relevant for policymakers and market participants as they determine what type of housing investments and policy interventions are most appropriate in each metro area.

To help organize and compare the relative housing shortages for these 75 metro areas, we conducted a cluster analysis that allows us to group them into eight categories, with each group sharing consistent market features. We call these eight groupings Housing Supply Market Metro Groups. Second, we created a Housing Needs

---

<sup>1</sup> The population in this analysis was limited to households in single-family and multifamily residences. Households that reside in manufactured homes, boats, recreational vehicles, etc. have been removed, as have households that do not have a rent or mortgage payment.



Score for each of these eight groups, both to assess the specific types of housing shortages (or, as the case may be, surpluses), and to indicate the types of housing supply initiatives that would be most effective for these communities. It is important to note that Housing Needs Score is useful only as a comparison tool between metro areas; it is not an absolute measure of housing needs.

Given the pressing housing needs of the nation's lowest-income households, we separately assess the housing needs of households with incomes at or below 60% of their metro's Area Median Income (AMI). This is the threshold that many U.S. Department of Housing and Urban Development (HUD) affordable housing programs target.

## Key Findings

**Cost-burdened<sup>2</sup> households are not just in coastal metro areas with high housing costs.** Some of the nation's most significant shares of housing cost-burdened households are in less expensive metro areas such as Miami-Fort Lauderdale-Pompano Beach, FL (Miami); Fresno, CA; Charlotte-Concord-Gastonia, NC-SC (Charlotte); and Las Vegas-Henderson-Paradise, NV (Las Vegas). In addition, cost burdens are up even in smaller metro areas. Far-less costly secondary metro areas, such as Bakersfield, CA; El Paso, TX; and McAllen-Edinburg-Mission, TX (McAllen), suffered from negative net migration for several years prior to 2019. As a result, developers were disincentivized from creating new housing, which in turn pushed up overall housing cost burdens.

**Addressing housing supply shortages will require different, highly localized strategies.** For instance, slightly larger-than-average metro areas with significant levels of population and income growth, where housing expenses<sup>3</sup> have grown faster than the national average and,

in turn, have experienced deteriorating affordability, may benefit most from increased development and the creation of more affordable supply. Metro areas with meaningful levels of federal housing subsidies and lower cost burdens among lower-income demographics are prime candidates for multifamily housing preservation. Meanwhile, metro areas with lower-than-average incomes and populations, and even lower growth rates of both, could use more single-family homes, both for ownership and renting.

**The supply and affordability problems described in this analysis have likely gotten worse.** For reasons explained below, our analysis relies on 2019 data. Since that year, however, home prices, rent levels, and new housing supply constraints have worsened. The supply/demand imbalance has been growing steadily over the past decade. This imbalance intensified since 2020, exacerbating the financial burdens experienced by many households due to the rising cost of renting or owning a home.

<sup>2</sup> HUD defines cost-burdened households as those that pay more than 30% of their income for housing. Severely cost-burdened households are defined as those paying more than 50% of their income on housing.

<sup>3</sup> Estimated monthly housing expense includes the principal & interest mortgage payment or rent payment in addition to utilities such as gas, water, electric, fuel; property taxes; HOA/condo fees; and insurance payments where applicable.



---

# I. Scoring the undersupply: metro area groupings and relative Housing Supply Needs

We identify eight distinct types of metro areas, each with a unique set of housing needs: Migration Metros, Lagging Metros, Tech Elite Metros, New Economy Metros, Bifurcated Metros, Mature Economy Metros, Stable Economy Metros, and Bicoastal Lifestyle Metros. We call these Housing Supply Market Metro Groups.

## Housing Supply Market Metro Groups

---

### Migration Metros (Examples: Charlotte, Jacksonville, Phoenix, Minneapolis)

Metros with income levels slightly below average and some of the lowest housing expenses in the nation. Although housing expense has been increasing in these metros, thanks to above average amounts of affordable inventory, affordability has not been deteriorating and the share of burdened households is below average. Population and income growth in this group tends to be above average thanks to strong employment levels.

---

### Lagging Metros (Examples: Bakersfield, Hartford, Memphis, New Orleans)

Some of the least populous metros with the lowest income and housing expense levels in the nation. Population and income growth in these metros is stagnant because of higher-than-average unemployment levels. Affordability is deteriorating even though housing expense growth is below average because of below average affordable inventory levels, leading to a significant level of burdened households.

---

### Tech Elite Metros (San Francisco, San Jose)

These two metros with the highest incomes and housing expenses in the nation. Even though unemployment is very low, population growth is still below average because housing expense has grown at the fastest pace. When combined with the dearth of affordable housing inventory, affordability has continued deteriorating in these metros, leading to higher-than-average levels of burdened households.

---

### The New Economy Metros (Examples: Atlanta, Austin, Dallas, Denver, Portland, Seattle)

Larger metros with above-average income and below-average housing expenses levels. Population, income, and housing expense are growing at some of the fastest rates in the country, even though the burdened household level is lower than average. Affordability eroded because of growth in housing expenses and lower-than-average affordable housing inventory.

---

### Bifurcated Metros (Examples: Fresno, Inland Empire, Miami, San Diego)

Larger metros with below-average income and above-average housing expense levels. Population growth in these metros is still significant, even with some of the highest unemployment levels in the nation. Incomes have been growing faster than average, but so has housing expense, which has led to deteriorating affordability and higher burdened household levels from a dearth of affordable inventory.

---

### Mature Economy Metros (Examples: Baltimore, Boston, Chicago, Philadelphia)

More populous metros with some of the highest income and housing expense levels in the country. Income growth has been lagging the nation in these metros, leading to declining populations. Housing expense growth is also at the bottom of all metros, which has led to an increase in affordability. Adequate levels of affordable inventory means the burdened household share is in line with the rest of the nation.



---

### Stable Economy Metros (Examples: Cincinnati, Detroit, Indianapolis, St. Louis)

Some of the least populous metros with the lowest incomes and housing expenses in the country. Populations in these metros have been growing slightly faster, but income growth is lagging although the unemployment rate is consistent with the rest of the nation. Affordability has been improving and burdened household shares lowest in the nation, thanks to a significant surplus of affordable inventory that has limited housing expense growth.

To help us evaluate and compare the undersupply from metro area to metro area, we created a new Housing Needs Score, a comparative metric that helps assess which housing tenures have the greatest needs across both individual metro areas and the metro area groupings. The higher the score, the greater the relative need.

Finally, for those with higher-than-average Housing Needs Scores, we evaluate whether preservation or new construction of additional single-family or multifamily homes is more likely to improve affordability.

The metro groupings with the highest overall supply needs, in descending order, are:

- **Bifurcated Metros** have below-average income levels and above-average housing costs. These include Miami and San Diego-Chula Vista-Carlsbad, CA (San Diego), among others. They have the highest general needs score for both multifamily rental housing and single-family owner-occupied homes, as well as the greatest relative need for housing targeted at both households earning between 80% – 120% AMI (Workforce), and households at or below 60% AMI (Affordable). Therefore, they would benefit from **additional market rate and subsidized multifamily rental and higher-density, single-family, owner-occupant properties.**
- **Lagging Metros** are characterized by lower-than-average income growth and flat population growth and include Bakersfield, CA; Hartford-East Hartford-Middletown, CT (Hartford); and New Orleans-Metairie, LA (New Orleans). They have the highest needs score for single-family renters among all the metro groupings and a high score for owner-occupants. In these markets, **preservation of existing housing** would be more beneficial than new home construction.

---

### Bicoastal Lifestyle Metros (Examples: New York, Los Angeles)

The two are the most populous metros in the country. Income, income growth, and housing expense levels in these metros are significantly above average. Population growth ranks among the bottom of all metros, because a dearth of affordable inventory has resulted in the highest burdened household levels in the nation. Even though housing expense growth is just slightly above average, affordability has only improved slightly.



- In **New Economy Metros**, while more development friendly, the amount of new supply has not kept up with the inflow of renters and homebuyers. Many of these metro areas experienced pandemic-induced population increases. Yet even before this recent influx, these metro areas, which include Atlanta-Sandy Springs-Alpharetta, GA (Atlanta); Austin-Round Rock-Georgetown, TX (Austin); Dallas-Fort Worth-Arlington, TX (Dallas); and Denver-Aurora-Lakewood, CO (Denver), among others, had above-average income and population growth. These metro areas require time to catch up, including for **investment in transportation infrastructure**. These markets could use **additional affordable multifamily** units to address a rental housing gap for low-income households. If growth slows, there is risk of an oversupply of more expensive class A multifamily units.
- The **Bicoastal Lifestyle Metros** of New York-Newark-Jersey City; NY-NJ-PA (New York); and Los Angeles-Long Beach-Anaheim, CA (Los Angeles), have much higher-than-average income levels and overall population totals. However, they also continue to have some of the highest shares of severely cost-burdened owners and renters. Los Angeles, CA, has the highest share of cost-burdened single-family owners of any metro area and higher shares than New York for renters. Both metro areas could benefit from **additional owner and rental units**, as evidenced by this group having the highest percentage shortfall of Workforce units and second highest percentage gap for Affordable units. Of course, given their combined population, they account for half of the needed Affordable and Workforce units nationally.

## II. All housing is local

Many households with higher income levels have the means to spend more on housing. Thus, just because a submarket in a metro area is considered expensive, many of the households that live in that submarket are likely able to afford it.

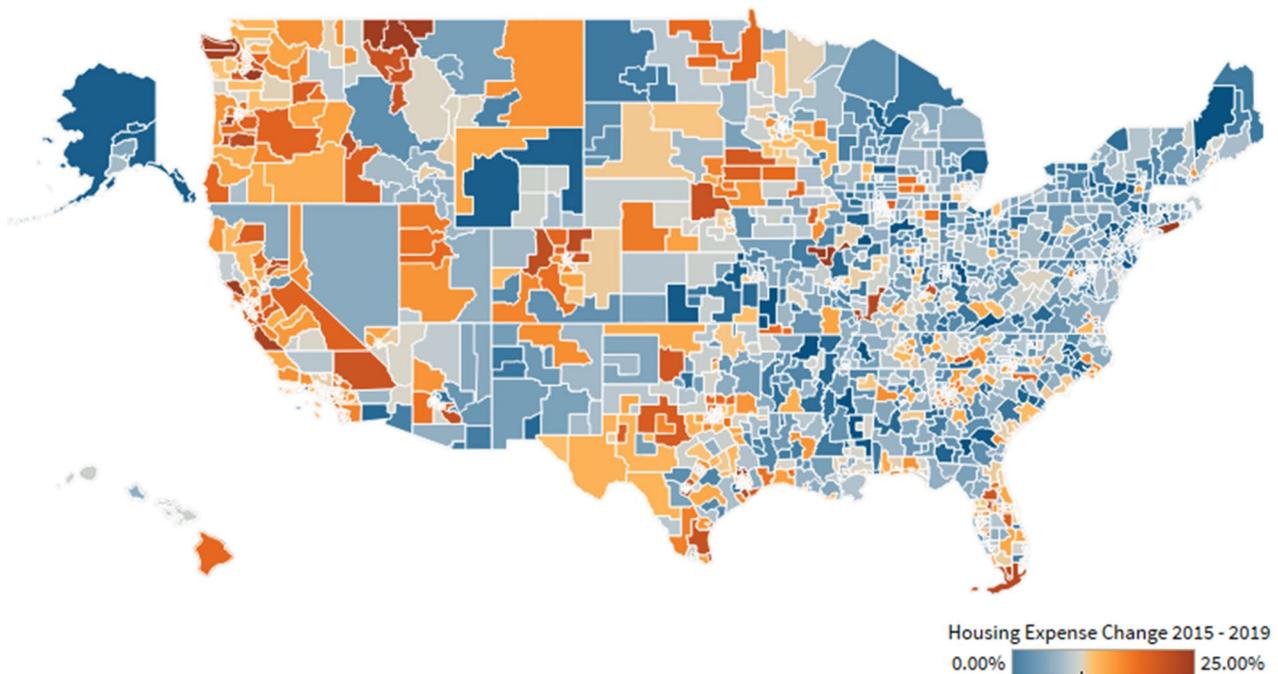
This prompts a few questions: What about the overall metro area population? What about lower-income households that live in high-cost metro areas? How adequate is the housing supply in any given metro area and for which income levels? The factors that drive affordability can differ greatly depending on the household characteristics of each metro area and the type of housing supply available at a particular point in time.



Given the well-known limitations of the U.S. Census Bureau’s housing and income data during the pandemic, data from the 2019 American Communities Survey (ACS) were used in this analysis. It is important to keep in mind that both home prices and rents have risen dramatically since 2019, so the housing supply and affordability challenges described in this paper, significant as they are, likely understate the scope of these challenges today.

As highlighted in Figure 1, displaying the geographic dispersion of housing expense change, which averaged 9.5% across the nation between 2015 and 2019, we see that there has been a significant housing expense increase in many parts of the country that are usually considered “affordable.” The blue areas show where housing expenses have risen, but at less than the national average. In contrast, the orange and red areas represent places with above-average increases. For example, the largest housing expense increases were in the Pacific West, Mountain West, Texas, and Florida.

**Figure 1.** Average monthly housing expense percentage change for owner occupants and renters 2015-2019



Percentage change of monthly housing expenses, which consist of mortgage or rental payments in addition to utilities such as gas, water, electric, fuel; property taxes; HOA/condo fees; and insurance payments where applicable, from 2015 – 2019 by CBSA or Public Use Microdata Area (PUMA) when unavailable. Housing expenses in orange and red shaded areas have risen faster than the national average of 9.5%, while expenses in blue shaded areas have risen slower than average.

Source: Fannie Mae Economic & Strategic Research Estimates of 2019 ACS Data



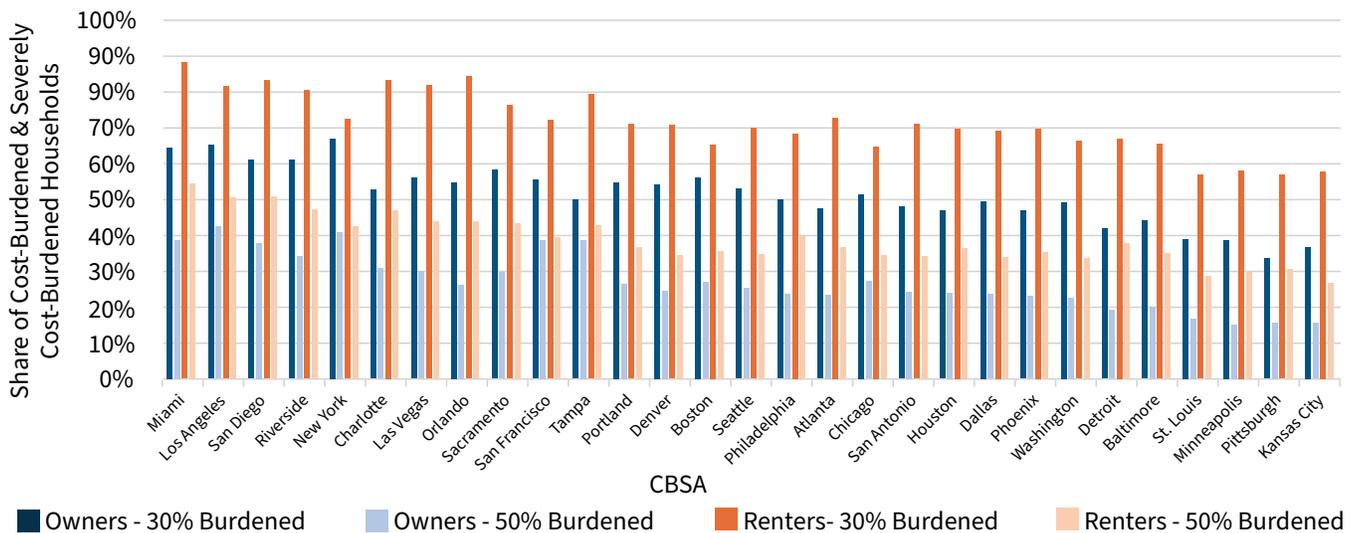
## Both homeowners and renters are cost-burdened

As a result, many households in these rapid-cost-increase metro areas became cost burdened. As seen in Figure 2, many metro areas have some of the nation’s largest percentage of cost-burdened and severely cost-burdened households, consisting of both homeowners and renters, for households earning up to 100% of the Area Median Income (AMI).

Although there are the usual, high-cost suspects of Los Angeles; New York; and San Francisco-Oakland-Berkeley, CA (San Francisco), perhaps less expected are historically more “affordable” metro areas such as Orlando-Kissimmee-Sanford, FL (Orlando); Phoenix-Mesa-Chandler, AZ (Phoenix); Dallas; and Las Vegas, all of which have a ratio of renter cost-burdened households exceeding 69% and homeowner cost-burdened households of more than 47% — and that was as of 2019, prior to the last few years of even further significant rent and home price appreciation.

Unsurprisingly, rental households tend to be more cost burdened and severely cost-burdened than homeowner households. What is surprising is the elevated number of cost-burdened rental households located in the top 30 metro areas that have lower-than-average costs of living, such as Detroit-Warren-Dearborn, MI (Detroit); St. Louis, MO-IL (St. Louis); and Pittsburgh, PA.

**Figure 2. Cost-burdened and severely cost-burdened households earning up to 100% AMI in the 30 most populous core-based statistical areas (CBSAs)**



Cost-burdened households are households allocating 30% or more of household income toward housing expense. Severely cost-burdened households are those that allocate 50% or more of household income toward housing expense. The population of renters includes both single- and multifamily rental households.

Source: Fannie Mae Economic & Strategic Research Estimates of 2019 ACS Data



## Cost-burdened households are not just in high-cost areas

Many of the nation's most cost-burdened households with elevated housing expenses are in higher-cost California metro areas, such as San Jose-Sunnyvale-Santa Clara, CA (San Jose); San Francisco; and Los Angeles, as seen in Figure 3. But there are also quite a few in other less-costly secondary metro areas, such as Bakersfield, CA; El Paso; and McAllen, all of which have suffered from negative net migration over the past several years — thereby dampening interest from developers to create new housing.

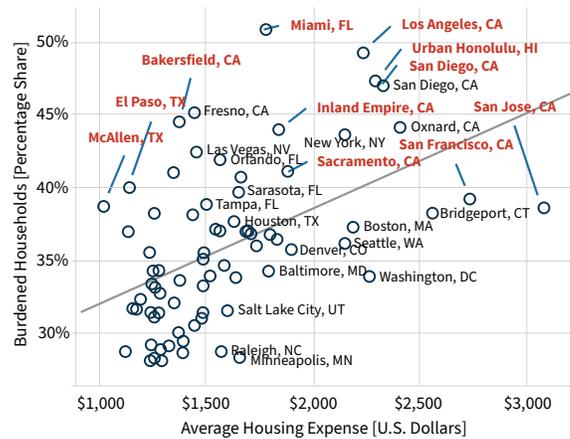
Interestingly, Sacramento-Roseville-Folsom, CA (Sacramento), and the Riverside-San Bernardino-Ontario, CA (Inland Empire), are considered “more affordable” metro areas in California, even though their share of cost-burdened households is among the highest in the country, at nearly 42% and 45%, respectively — well above the national average of 30% for all households.

Miami is by far the nation's most cost-burdened metro area, with more than 51% of all households paying more than 30% of their income on housing costs, with Urban Honolulu, HI, not far behind at about 48%. These two metro areas both rely heavily on tourism as an economic driver. As a result, both metro areas tend to attract well-heeled investors that are willing — and more importantly, able — to pay higher housing prices. This means that many locals, who typically earn far less than out-of-state visitors, are competing for housing with higher-income seasonal occupants.

## Cost burdens are spread widely, among both homeowners and renters

Breaking down the households by type of tenure proved an interesting exercise. Homeowners can be as cost-burdened as renters, as seen in Figure 4, and not just in high-cost metro areas such as New York, but also in places like Knoxville, TN, and Greensboro-High Point, NC. While both metro areas enjoy a below-average cost of living, they also have an above-average percentage of older-aged population cohorts — not a demographic trend developers typically look for when deciding where to build single-family housing.

**Figure 3. Average Housing Expense and Homeowners & Renters Cost-Burdens**



**Figure 4. Average Housing Expense and Homeowner Cost-Burden**



Cost-burdened households are households allocating 30% or more of their monthly income towards their monthly housing expense. Some of the metros with the most significant cost-burdens across all housing tenures at their respective housing expense level are highlighted in orange.

Source: Fannie Mae Economic & Strategic Research Estimates of 2019 ACS Data



Cost burdens for households in single-family rentals tend to be more significant compared to single-family homeowner households, even with lower-average housing expense levels, as seen in Figure 5. For example, the primary Florida metro areas of Orlando; Tampa-St. Petersburg-Clearwater; Jacksonville; and Miami have all been benefiting from positive job growth, increased net migration, and rising personal income levels over the past few years. Many have positive demographic profiles as well, especially in the key 35- to 55-age cohort — the group most likely to own a single-family home. Yet, these metro areas have been experiencing some of the fastest-growing increases in housing expenses. For many cost-burdened households in this age demographic, renting a home is the only affordable option.

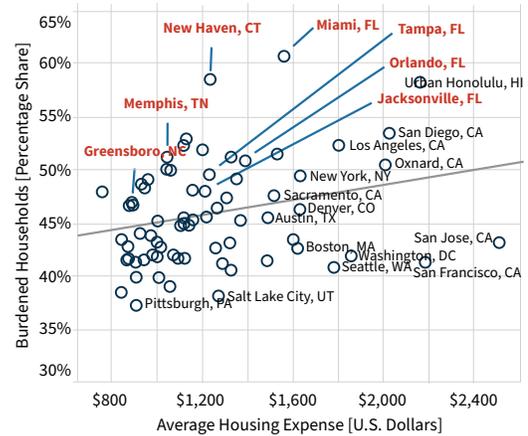
Multifamily renters, however, are consistently the most cost burdened, as shown in Figure 6. Many unlikely metro areas have seen an increase in the percentage of cost-burdened households renting in multifamily properties, such as Buffalo-Cheektowaga, NY (Buffalo); New Orleans; Fresno; and Richmond, VA. But this is really a tale of two types of cities. Buffalo and New Orleans have endured negative net migration, meager job growth, and a lack of housing for years. Fresno and Richmond, on the other hand, have seen an increase in jobs and a lower cost of living, coupled with a younger-aged demographic profile, which tends to attract multifamily renters, but not enough supply has been available to meet the increase in demand.

## A unique approach was needed to gain a deeper differentiation between households and metro areas

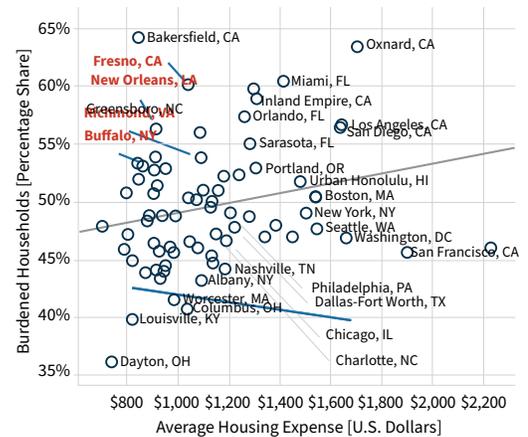
To better understand the affordable housing needs of the nation, we looked at the 75 most populous metro areas in the U.S., representing about 69% of the country's population, in greater detail. Eleven market feature characteristics from the Census Bureau's 2019 American Communities Survey were analyzed to assess how multiple factors may affect housing affordability. The market features that were chosen for inclusion in this analysis were all weighted equally and are specific to one of three main categories: Housing, Demographic, or Economic, as seen in Figure 7.

We acknowledge that the factors selected for inclusion in this analysis are a limited subset of all of the characteristics that describe housing markets. The intent was to select market features that best reflected not just the housing markets but also the households that comprise them, and the economic trends that underlie them, to draw insights that cannot be seen using static measures, such as the

**Figure 5. Average Housing Expense and Single-Family Rental Cost-Burdens**



**Figure 6. Average Housing Expense and Multi-Family Rental Cost-Burdens**



Cost-burdened households are households allocating 30% or more of their monthly income towards their monthly housing expense. Some of the metros with the most significant cost-burdens across all housing tenures at their respective housing expense level are highlighted in orange.

Source: Fannie Mae Economic & Strategic Research Estimates of 2019 ACS Data



share of cost-burdened households at a given point in time. However, there are other factors, such as commuting costs, inherent to the cost of living that create significant barriers to affordability; these are particularly prevalent in both very dense and very expensive metros such as those in Bicoastal Lifestyle metros and Tech Elite metros.

The housing needs of metro areas vary based on not just one but typically multiple market features at a time. Thus, comparing the relationships of dimensions directly to each other, such as Annual Household Income and Monthly Housing Expense, for example, is useful for identifying relationships between pairs. Even so, this approach can still be limiting in creating a more robust assessment. Therefore, we employed a methodology that allows for the evaluation of multiple characteristics simultaneously. To do this effectively, we first conducted a clustering analysis to group markets by similarities in their underlying market features.

Clustering<sup>3</sup> metro areas together enabled us to find patterns in the data. As it relates to the nation’s 75 most-populous Metropolitan Statistical Areas (metro areas), the clustering techniques were applied to identify those with similar combinations across not just a few but all respective market features. Separating metro areas into eight distinct groups accounted for just over 70% of the information that distinguishes the clusters from one another.

However, looking at correlations over large datasets can become limited if the data points are not aggregated to dimensions that are easily understood. Principal components allow us to reduce the dimensionality of a dataset and visualize how groups compare to one another by transforming them into smaller ones that still contain most of the useful and key data elements.

Clustering provides more insight into the similarities between metro areas, but by itself does not provide any context regarding the details of those similarities. Figure 8 shows the distribution of principal component values and housing supply market feature groups for the 75 most-populous metro areas.

<sup>3</sup> The k-means clustering algorithm finds patterns in the data which are used to group observations into clusters or groups. To determine the appropriate number of clusters, the k-Means model was iterated through successive cluster groupings to identify the most similarities between markets with the fewest number of clusters.

## Figure 7. Housing Supply Market Features



### Housing

- **Affordable (Shortage) | Surplus Share** – Calculates the deficit between the cumulative number of households at a given income level and the amount of the housing units with an affordable housing expense at that income level.
- **Cost-Burdened Household Share** – Households with a housing expense at, or above, 30% of their monthly household income.
- **Monthly Housing Expense** – The sum of either a household’s monthly rent or owner costs, and additional expenses. This includes, where applicable, property taxes, housing association, and condo fee, and hazard/loss/flood insurance



### Demographic

- **Households** – The total number of single-family owner-occupied, single-family rental, and multifamily households.
- **Population** – Total inhabitants of metro area.

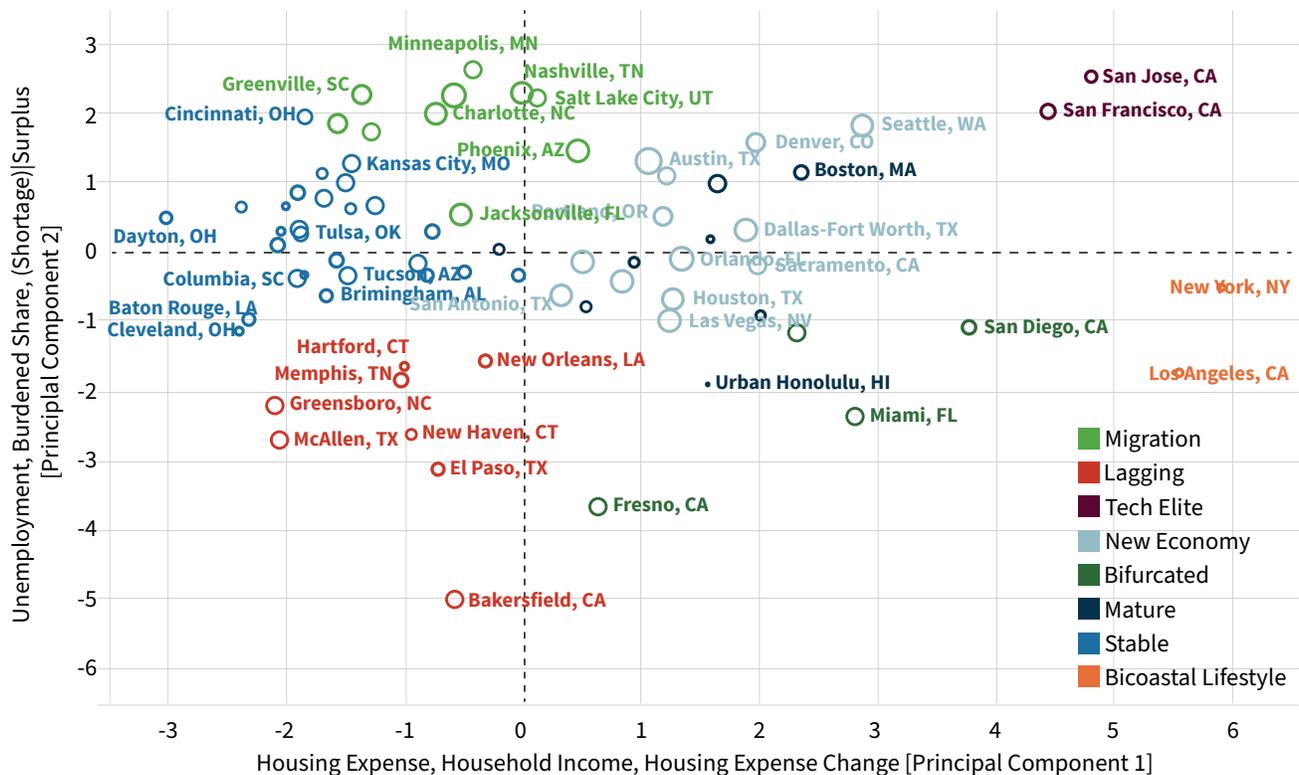


### Economic

- **Annual Household Income** – Total household income, inclusive of wages and other sources.
- **Unemployment Rate** – The share of unemployed individuals as a measure of the total labor force. This excludes individuals who are not actively seeking employment are below the legal age of employment.

Note: The five-year changes of Cost-Burdened Household Share, Monthly Housing Expense, Total Population, and Annual Household Income were also included.

**Figure 8.** Housing supply market metro group principal component distributions for the 75 most popular CBSAs



The clustering analysis conducted on the metros resulted in eight distinct groups sized by the 5-Year Population Change based on similar patterns Broken into two components:

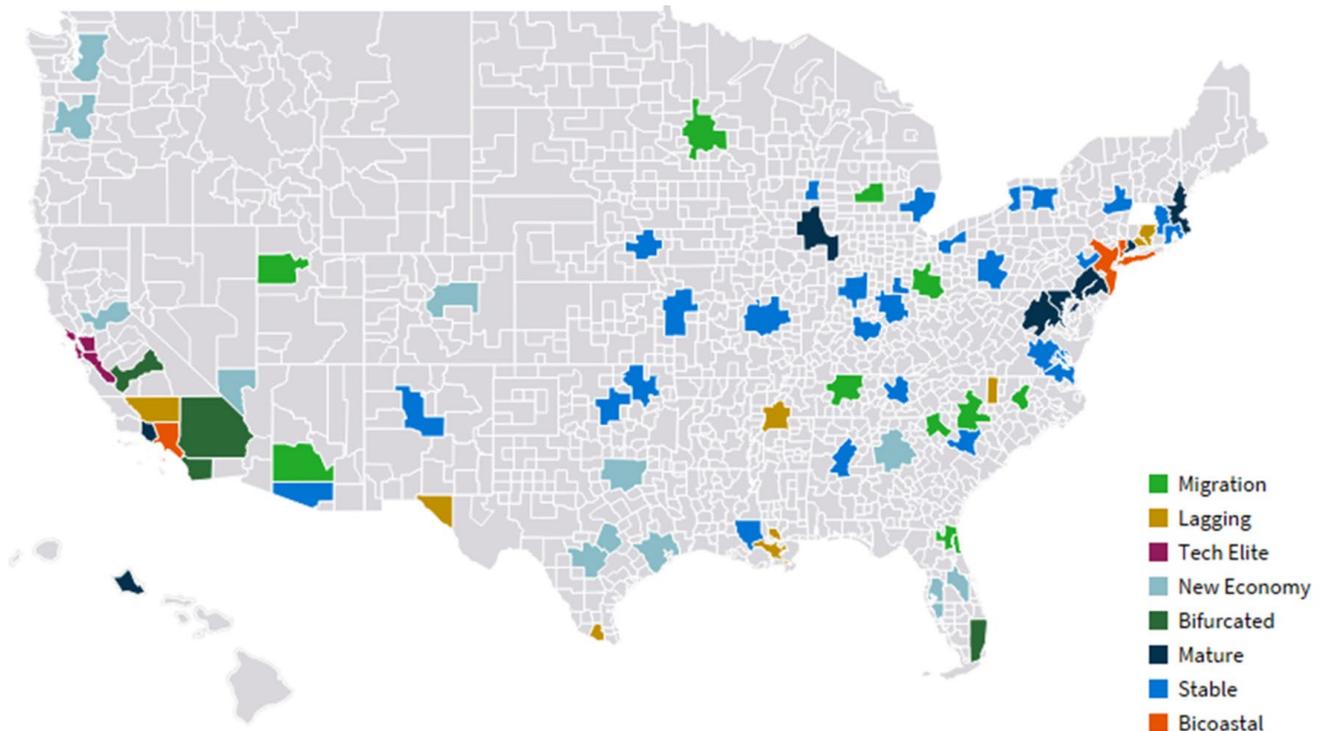
- **Principal Component 1** includes Housing Expense, Household Income, Housing Expense Change.
- **Principal Component 2** includes Unemployment Rate, Burdened Households, and Affordable Inventory levels.

Source: Fannie Mae Economic & Strategic Research Estimates of 2019 ACS Data

Positive values along both axes of the chart in Figure 8 describe more expensive areas, with growing housing expenses, lower unemployment, higher household incomes, and lower housing-cost burden levels. Negative values mean lower housing expenses, higher unemployment, worsening affordability, and lower incomes. Positive x-axis and negative y-axis values are metro areas with lower affordability but higher incomes. Inversely, negative x-axis and positive y-axis values are metro areas where housing expenses and incomes are low, but affordability is favorable. The size of the bubbles is determined by the Five-Year Population Change and more than seven of the initial 11 market features are represented in Figure 8 above.



**Figure 9. Housing Supply Market Metro Groups**



	Migration	Lagging	Tech Elite	New Economy	Bifurcated	Mature	Stable	Bicoastal Lifestyle	Top 75 CBSAs
<b>Households</b>	5.95M	2.05M	1.93M	12.65M	3.82M	9.37M	11.64M	9.45M	<b>56.86M</b>
<b>Annual Household Income</b>	\$97.5K	\$81.6K	\$166.7K	\$100.6K	\$95.5K	\$117.6K	\$87.2K	\$115.7K	<b>\$104.1K</b>
<b>Income 5-Yr Change</b>	18.35%	9.85%	27.73%	17.67%	20.93%	15.35%	13.99%	19.78%	<b>17.49%</b>
<b>Monthly Housing Expense</b>	\$1,522	\$1,397	\$2,859	\$1,732	\$1,931	\$1,989	\$1,354	\$2,217	<b>\$1,795</b>
<b>Housing Expense 5-Yr Change</b>	12.04%	5.68%	18.97%	16.23%	14.63%	8.32%	6.82%	12.14%	<b>11.73%</b>
<b>Burdened Household Share</b>	31.12%	39.83%	39.34%	37.76%	48.05%	36.54%	32.18%	46.36%	<b>37.97%</b>
<b>Burdened Household 5-Yr Change</b>	-10.30%	-2.20%	-6.29%	-2.00%	-5.09%	-8.21%	-9.16%	-7.77%	<b>-6.75%</b>
<b>(Shortage)  Surplus Housing Share</b>	37.83%	20.43%	21.35%	24.54%	3.92%	26.98%	35.68%	7.33%	<b>24.11%</b>
<b>Population</b>	21.33M	8.00M	6.66M	45.99M	15.12M	32.16M	40.08M	33.05M	<b>202.42M</b>
<b>Population 5-Yr Change</b>	6.47%	1.01%	1.34%	6.67%	2.55%	0.56%	1.18%	-1.24%	<b>2.51%</b>
<b>Unemployment Rate</b>	3.84%	5.89%	3.68%	4.31%	5.32%	4.55%	4.47%	4.66%	<b>4.50%</b>



---

## Distinct supply features of the eight Housing Supply Market Metro Groups

Describing the metro groups can help to identify which metro areas need what housing resources (summary statistics for each group are shown in Figure 9). For example, in Lagging Metros, such as Bakersfield, CA, and Hartford, CT, there is above-average unemployment coupled with significant cost burdens, resulting in areas that are likely in need of a more diverse economic base and more affordable housing inventory. The metro areas identified in the Lagging Metro group are prime targets for single-family preservation. The characteristics of Lagging Metros, which also entail below-average incomes, slower-than-average income growth, lower-than-average housing payments, and smaller-than-average populations, do not as easily support the introduction of new supply as a means of improving affordability.

On the other hand, the New Economy Metros, including Atlanta, Austin, Dallas, and Denver, have seen job growth and net migration trends outpace development for years. Despite elevated levels of development underway, these metro areas could benefit from more affordable supply across all housing types.

Conversely, dislocation between labor and housing markets has caused different housing needs in Bifurcated Metros, such as San Diego and Miami. A portion of households in these metro areas have sufficiently high incomes but also a high enough housing expense that burden levels are significant, even with lagging housing expense growth. But there is another portion of households at the opposite end of the income spectrum, dealing with less diverse economic conditions while confronting higher housing costs, sometimes resulting in higher unemployment levels. As a result, these metro areas are in greater need of Affordable and Workforce rental housing.



### III. Developing a scoring metric: The Housing Needs Score

This data and analysis described above allows us to create a Housing Needs Score, a metric that assesses which housing tenures have the greatest needs across both individual metro areas as well as the eight, clustered metro groups. We identify where the values of each market feature fall for a given metro area across every housing tenure, relative to the rest of the metro areas, and then rank them on a scale from 1 to 10, with a score of 10 representing a metro area that is significantly worse than average and a score of 1 being significantly better than average for that market variable.

To identify metro areas that are true outliers on any given dimension, the values of 1 through 10 do not represent deciles, but instead were fitted to a bell curve. This means that a score of 10 represents a value that falls in the 95<sup>th</sup> – 100<sup>th</sup> percentile, and a score of 1 represents a value that falls in the 1<sup>st</sup> – 5<sup>th</sup> percentile. Scores between 4 and 7 represent a value that is within the average range (one standard deviation), and scores between 2 and 3, and 8 and 9, represent values that are closer to the tails. For example, San Francisco’s annual household income level would receive a score of 1 because it is highest in the country and therefore represents the least significant need for more income.

#### We focused on the following variables in creating the Housing Needs Score:

- Affordable (shortage)|surplus share
- Cost-burdened household share
- Monthly housing expense
- Annual household income
- Unemployment rate
- Cost-burdened five-year change
- Monthly housing expense five-year change
- Annual household income five-year change

Housing Needs Scores were calculated separately for each housing tenure and then summed together to create a composite score. Scores were then averaged across metro areas to calculate the Housing Needs Score for each of the eight Housing Supply Market Metro Groups.



As seen in Figure 10, any housing tenure with a Housing Needs Score of 50 or higher suggests a high housing need for that housing type. A Housing Needs Score of between 40 and 49.9 suggests an above average housing need, and a score of 39.9 or below suggests lower than average housing shortfall.

**Figure 10. Housing affordability market feature groups — housing needs scores and shortage counts**

■ Scores of 50 and higher  
■ Scores between 40-49.9  
■ Scores below 40

Metro group	Owner-occupied	SF rental	Multifamily rental	Housing unit shortage	Total households   shortage Share
<b>Bifurcated Metros</b> <b>Total Housing Needs Score: 164.1</b> Fresno, Inland Empire, Miami, San Diego	<b>Score: 55.7</b> 	<b>Score: 49.5</b> 	<b>Score: 58.9</b> 	0-60% AMI: 587.9K 80-120% AMI: 479.3K <b>Total: 1.07M</b>	0-60% AMI: 1.13M   52.0% 80-120% AMI: 2.69M   17.8% <b>Total: 3.82M   28.0%</b>
<b>Lagging Metros</b> <b>Total Housing Needs Score: 162.4</b> Bakersfield, El Paso, Greensboro, Hartford, McAllen, Memphis, New Haven, New Orleans	<b>Score: 52.9</b> 	<b>Score: 61.2</b> 	<b>Score: 48.3</b> 	0-60% AMI: 61.2K 80-120% AMI: 45.6K <b>Total: 106.8K</b>	0-60% AMI: 734.6K   8.3% Workforce: 1.329M   0.03% <b>Total: 2.05M   5.2%</b>
<b>New Economy Metros</b> <b>Total Housing Needs Score: 146.7</b> Atlanta, Austin, Dallas, Denver, Houston, Las Vegas, Orlando, Portland, Sacramento, San Antonio, Sarasota, Seattle, Tampa	<b>Score: 51.0</b> 	<b>Score: 44.7</b> 	<b>Score: 51.0</b> 	0-60% AMI: 382.7K 80-120% AMI: 246.9K <b>Total: 629.6K</b>	0-60% AMI: 3.99M   9.6% 80-120% AMI: 8.65M   2.9% <b>Total: 12.65M   5.0%</b>
<b>Bicoastal Lifestyle Metros</b> <b>Total Housing Needs Score: 135.9</b> New York, Los Angeles	<b>Score: 45.3</b> 	<b>Score: 44.8</b> 	<b>Score: 45.8</b> 	0-60% AMI: 911.3K 80-120% AMI: 1.25M <b>Total: 2.16M</b>	0-60% AMI: 3.18M   28.7% 80-120% AMI: 6.27M   19.9% <b>Total: 9.45M   22.9%</b>
<b>Stable Economy Metros</b> <b>Total Housing Needs Score: 131.3</b> Albany, Albuquerque, Allentown, Baton Rouge, Birmingham, Buffalo, Cincinnati, Cleveland, Columbia, Dayton, Detroit, Indianapolis, Kansas City, Knoxville, Louisville, Milwaukee, Oklahoma City, Omaha, Pittsburgh, Providence, Richmond, Rochester, St. Louis, Tucson, Tulsa, Virginia Beach, Worcester	<b>Score: 42.2</b> 	<b>Score: 46.0</b> 	<b>Score: 43.1</b> 	0-60% AMI: 15.0K 80-120% AMI: 0 <b>Total: 15.0K</b>	0-60% AMI: 4.15M   0.0% 80-120% AMI: 7.49M   0.0% <b>Total: 11.64M   0.001%</b>
<b>Mature Economy Metros</b> <b>Total Housing Needs Score: 129.6</b> Baltimore, Boston, Bridgeport, Chicago, Oxnard, Philadelphia, Honolulu, Washington, DC	<b>Score: 45.7</b> 	<b>Score: 40.2</b> 	<b>Score: 43.6</b> 	0-60% AMI: 74.7K 80-120% AMI: 40.9K <b>Total: 115.6K</b>	0-60% AMI: 3.24M   2.3% 80-120% AMI: 6.12M   0.67% <b>Total: 9.37M   1.2%</b>
<b>Migration Metros</b> <b>Total Housing Needs Score: 122.3</b> Charlotte, Columbus, Grand Rapids, Greenville, Jacksonville, Minneapolis, Nashville, Phoenix, Raleigh, Salt Lake City	<b>Score: 39.7</b> 	<b>Score: 39.7</b> 	<b>Score: 42.9</b> 	0-60% AMI: 38.3K 80-120% AMI: 30.8K <b>Total: 69.1K</b>	0-60% AMI: 1.72M   2.2% 80-120% AMI: 4.23M   0.7% <b>Total: 5.95M   1.2%</b>
<b>Tech Elite Metros</b> <b>Total Housing Needs Score: 114.6</b> San Francisco, San Jose	<b>Score: 43.8</b> 	<b>Score: 34.4</b> 	<b>Score: 36.5</b> 	0-60% AMI: 92.3K 80-120% AMI: 161.5K <b>Total: 253.9K</b>	0-60% AMI: 586.6K   15.7% 80-120% AMI: 1.34M   12.1% <b>Total: 1.93M   13.2%</b>

Source: Fannie Mae Economic & Strategic Research Estimates of 2019 ACS Data



---

Housing Needs Scores provide an indication of how significant the housing needs are for each tenure of each housing group and are a useful method for comparing groups directly to one another. However, the Housing Needs Scores only provide a measure of severity and do not consider the magnitude of the respective shortage. Therefore, we provide an estimate of how many units are required to offset the housing shortage in each Housing Supply Market Metro Group. Across the top 75 metro areas, the cumulative shortage is around 4.4 million units.

Because the demographics of metro areas and their housing stock can vary significantly, some metro areas have a pronounced need for more Affordable low-income housing, while others need more Workforce housing. Therefore, we provide estimates for both housing segments. For the purposes of this paper, Affordable low-income housing units are defined as those with a housing expense that does not create a cost burden for households that are at or below 60% of AMI. Affordable Workforce housing is defined similarly but for households between 80% to 120% of AMI.

In taking this approach, we believe it provides clear identification of which targeted housing supply strategies may be most impactful by metro area. For example, considering the disproportionate population sizes of metro areas such as New York and Los Angeles, both of which comprise the Bicoastal Lifestyle group, it makes sense that this group has the largest overall housing unit shortage, which amounts to slightly over two million units. But the magnitude of housing needs differs by metro area. While it is true that the Bicoastal Lifestyle Metros may require the largest influx of new supply, it is clear from looking at the Housing Needs Score that the need for additional housing is more urgent in the Bifurcated, Lagging, and New Economy Housing Supply Market Metro Groups — even though the total shortage across all three groups is less than two million units.

What's more, within each Housing Supply Market Metro Group, the Housing Needs Score provides a measure of which tenure of housing should be focused on within each group. For example, Bifurcated Metros would benefit considerably from additional single-family owned units and multifamily units, because they have the highest Housing Needs Score of any group for both tenures. However, the need for multifamily units in these metro areas is more significant than single-family rentals. Lagging Metros, on the other hand, have some of the highest shares of single-family renting households and a significantly higher Housing Needs Score for single-family rentals than multifamily, suggesting that the need for affordable single-family rental housing is more urgent than multifamily development.

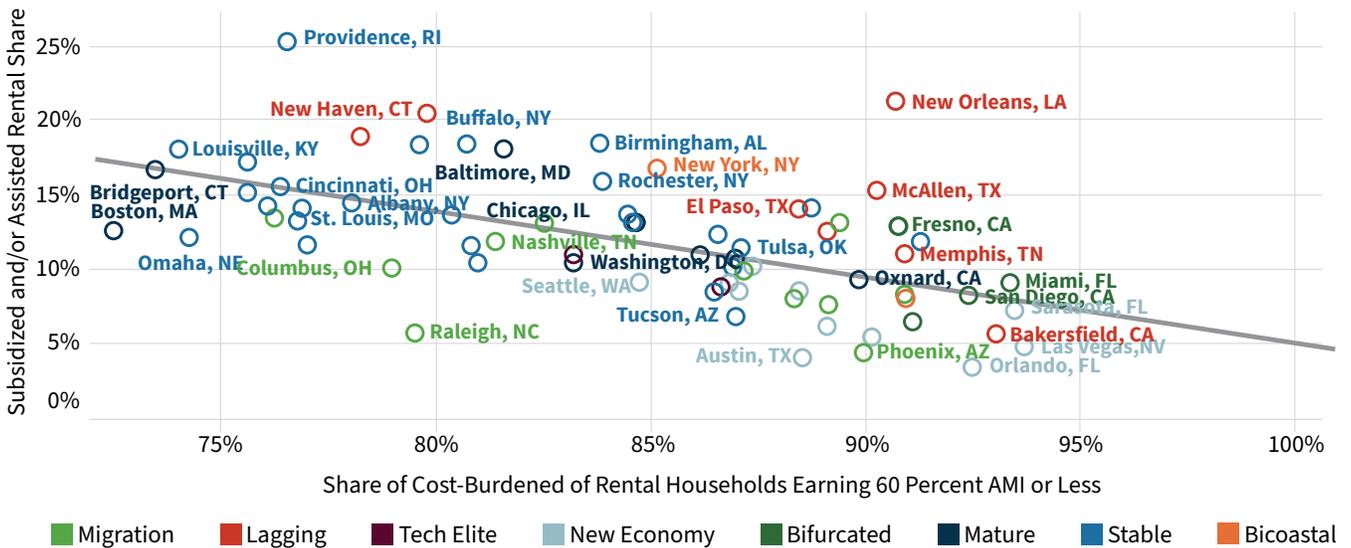


## IV. Lower-income households have divergent needs depending on where they are located

Housing demand and preferences can vary significantly for different households, regardless of income levels and the type of housing. However, general metro market-level data can obscure the needs of specific consumer segments. Therefore, we provided additional analyses focused on the needs of households earning 60% or less of AMI to identify where a shortage of housing units is likely to be most acute.

Figure 11 shows that the Lagging, New Economy, and Bifurcated Market Metro Groups have the highest cost burdens in the nation for rental households earning 60% or less of AMI. The downward slope in the data suggests that subsidies aimed at low-income renters is associated with a lower overall renter burden among low-income renters.

**Figure 11.** Subsidized and assisted share of rentals and rental households earning 60% AMI or less cost burdens



---

Multifamily preservation centers around maintaining the financing and subsidies required to incentivize property owners to keep rents at levels affordable to lower-income tenants. For example, multifamily properties financed with FHA loans from HUD have provisions that prompt owners to offer units at rents affordable to lower-income tenants in return for more favorable loan terms. Other properties are also part of rent supplement or rental assistance payment contracts.

When the terms of such programs expire, owners can refinance and offer units that were previously earmarked as affordable at much higher market rents. Thus, much of the preservation of multifamily is geared toward providing tools to encourage owners to refinance these properties before the affordability restrictions expire. The Stable Economy Market Metro Group has some of the highest shares of subsidized and assisted rental stock and would benefit most from multifamily preservation efforts encouraging owners to keep their existing units at affordable rental rates.

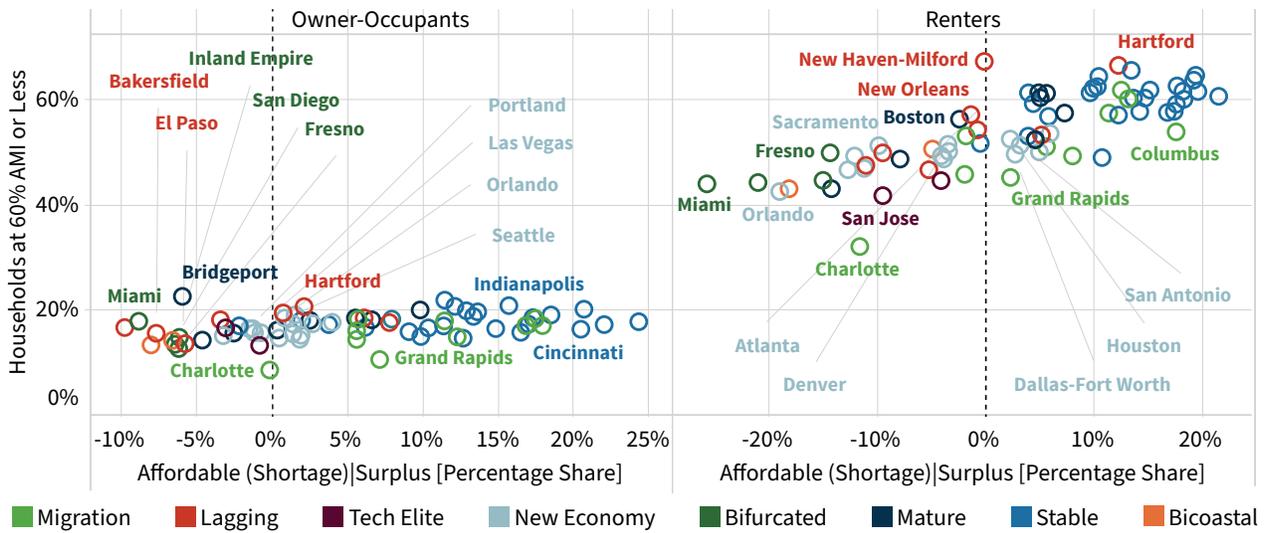
There are also markets that would benefit from the introduction of more multifamily subsidies. Many New Economy Metros experienced positive job growth between 2015 and 2019 that also increased levels of net migration, along with housing expenses. Some of the New Economy Metros also have sizeable concentrations of workers in the lower-paying retail and leisure/hospitality employment sectors, as well as some of the lowest levels of federal government housing assistance as a share of total rental households. Las Vegas and Orlando, for example, both have cost-burden shares upward of 90% for rental households earning 60% or less of AMI, but less than 5% of the rental households receive some form of subsidy or assistance.

## **Metros where affordable housing supply shortage is most acute**

Inventory levels affordable to households earning 60% or less of AMI can indicate whether there are shortages of affordable housing for a segment that is of particular concern to policymakers. The Affordable (Shortage) Surplus Share, shown in Figure 12, measures the adequacy of housing supply levels by calculating the deficit between the cumulative number of households at a given income level and the number of housing units with an affordable housing expense at that level. For example, a monthly housing expense of \$2,500 a month or less does not create a cost-burden for a household that earns \$100,000 annually. Larger numbers of households earning \$100,000 with a housing expense below this level indicate a surplus of inventory in this example. Inversely, a greater number of households with a housing expense larger than this level indicate an inventory shortage.



**Figure 12. Affordable (shortage) surplus share available to homeowner and rental households earning 60% AMI or less**



Therefore, if the Affordable (Shortage) Surplus Share is positive, it means that there are more than enough affordable units in terms of inventory, and if it is negative, there are not enough affordable units of stock relative to the number of households earning 60% or less of AMI. It is important to note that although there might be sufficient levels of housing inventory that are affordable, that does not mean that they are available to households earning that level of AMI. Households are free to live anywhere, and many do live in units that are cheaper than they can afford, and, conversely, many live in units that are more expensive. While the allocation of units affordable by household is not “fairly” spread out across the entire population of households, the inventory of housing at these various income levels does exist and is included for the purpose of this analysis.

Lagging and Bifurcated Market Metro Groups have the greatest shortage of single-family owner-occupant units affordable to those households earning 60% or less of AMI. However, the affordability gap for rental housing is most acute in the New Economy and Bifurcated Metros. Low-income households in these areas likely struggle to find available affordable housing. In contrast, low-income households have an easier time finding both affordable single-family owner-occupant units and rental homes in the Stable and Migration Metros. These are areas with significant concentrations of low-income households but have adequate amounts of affordable units. Conversely, the Lagging Market Metro Group has equally significant levels of low-income households but does not have adequate supply affordable at these income levels. Low-income households in Mature Metros may have an easier time finding rental housing at affordable levels, but there is a shortage of affordable owner-occupant housing stock.



---

## V. A greater need for preservation and construction

Although the data used in this analysis is from 2019, much has happened in national and local economies since then. Many of the housing trends observed through 2019 foreshadowed what occurred since the beginning of 2020: dramatic increase in housing prices and strong rent growth and higher demand for affordable housing, both owned and rental.

For current homeowners, the staggering 40% estimated increase in national housing prices from 2020 through June 2022 may be viewed as a positive outcome stemming from all the pent-up housing demand and record low mortgage rates for most of that time. However, these gains aside, the rapid rise in housing prices reflects a serious supply/demand imbalance that has been growing over the past decade — an imbalance that is producing financial burdens and growing housing insecurity for many households.

Housing affordability will not improve without a concerted focus on increasing the pace of single-family and multifamily construction. New home construction is not a cure-all for a lack of affordable housing supply. Because of the elevated cost of construction, much of this new supply is unlikely to be considered affordable for many households. Nevertheless, when a new home is occupied by a renter or owner who can afford to move, their prior home is now available for other buyers or renters.

Along with increasing the number of newly built homes on the market, more capital needs to flow into housing preservation. In most metros, the rehab of an existing unit to extend its useful life is cheaper than building a new unit. With the right incentives, currently affordable units that are in danger of being lost can be retained for rent or sale to middle- and lower-income household.





Fannie Mae®

## About the authors

Kim Betancourt is Fannie Mae's  
Vice President of Economics and Multifamily Research.

Stephen Gardner is an economist and Lead Associate on Fannie Mae's  
Economic and Strategic Research team.

Mark Palim is Fannie Mae's  
Vice President and Deputy Chief Economist.



Opinions, analyses, estimates, forecasts, and other views of Fannie Mae's Economic & Strategic Research (ESR) Group included in these materials should not be construed as indicating Fannie Mae's business prospects or expected results, are based on a number of assumptions, and are subject to change without notice. How this information affects Fannie Mae will depend on many factors. Although the ESR Group bases its opinions, analyses, estimates, forecasts, and other views on information it considers reliable, it does not guarantee that the information provided in these materials is accurate, current, or suitable for any particular purpose. Changes in the assumptions or the information underlying these views could produce materially different results. The analyses, opinions, estimates, forecasts, and other views published by the ESR Group represent the views of that group as of the date indicated and do not necessarily represent the views of Fannie Mae or its management.