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Catching up on an Eventful First Quarter

by **Parker Ross,**
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The housing market entered 2022 on solid footing with demand far outstripping supply, near record-low mortgage rates and double-digit home-price growth.

Housing market outlooks from the beginning of the year, including our own, generally expected interest rates to gradually trend higher and home-price appreciation to slow. At the time, given demographic and work-from-home tailwinds, as well as the strong economic backdrop, it was difficult to pinpoint what could slow the market's momentum outside of the building headwind of affordability constraints. However, as the year has progressed, new risks began to emerge that exacerbated some of the pre-existing upward pressure on inflation and interest rates.

First, the Russian invasion of Ukraine resulted in severe disruptions to food and commodity production as well as supply chains more generally. Next, a significant COVID-19 outbreak in China resulted in some of the pandemic's most extensive lockdowns to date in critical port cities. Both events have lifted actual and expected inflation and in turn prompted a more aggressive response from the Federal Reserve (the Fed).

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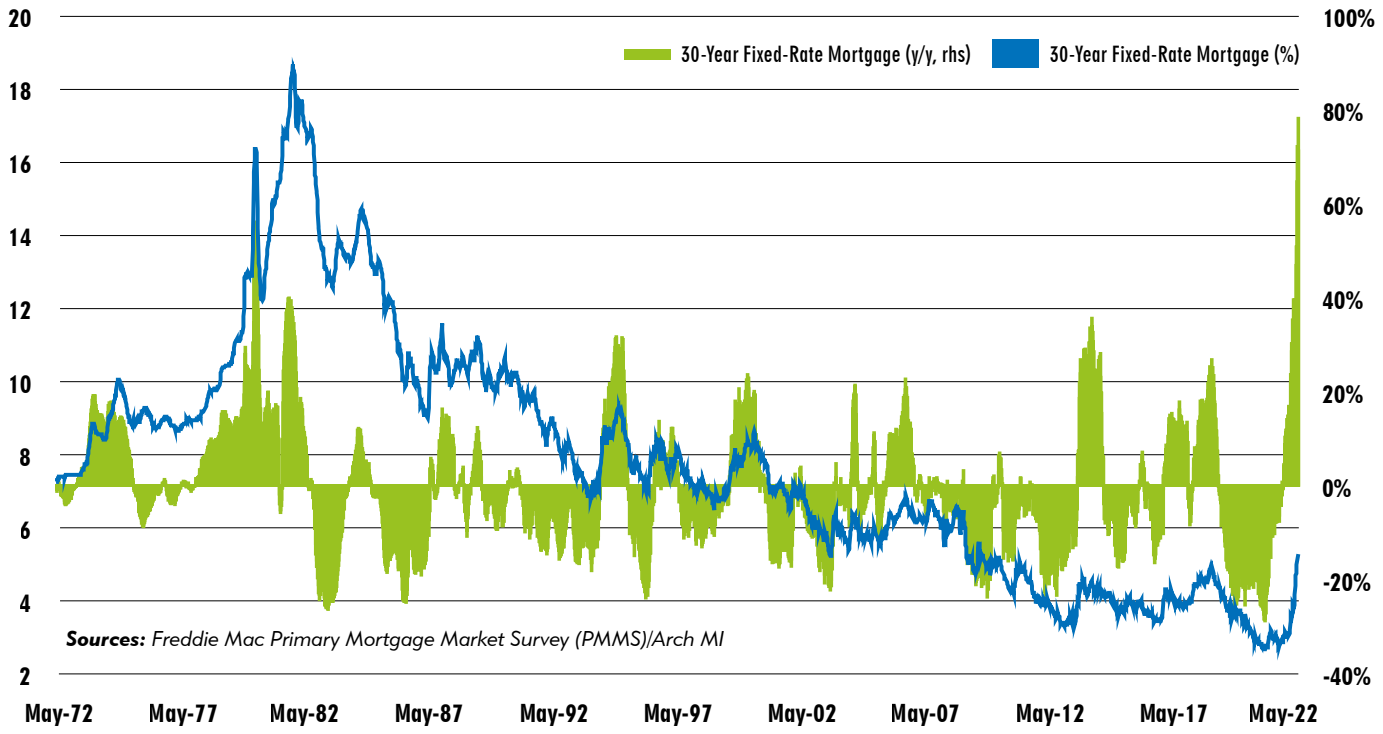
Catching up on an Eventful First Quarter *(continued from page 1)*

Already, the upper bound of the target range for the federal funds rate has been lifted to 1%, which was roughly where markets at the start of the year expected it to be by the end of 2022. Markets now expect the Fed to lift its policy rate near 3% by year-end, which would be the most aggressive hiking cycle in decades. Given the sharp increase in rate hike and inflation expectations, 10-year U.S. Treasury yields have roughly doubled from about 1.5% at the end of 2021 to around 3% in May.

Mortgage rates have climbed higher even more rapidly. The 30-year fixed-rate mortgage started the year at 3.11%, according to Freddie Mac's Primary Mortgage Market Survey (PMMS), right in line with the 2021 annual average and not far removed from the record-low 2021 average of 2.96%. However, mortgage rates have since furiously increased to the highest level since 2009 — up 69%, or 216 basis points (bps), to 5.27% as of May 5 and up 78% from one year prior, by far the largest relative annual increase on record (Figure 1).

Figure 1: 30-Year Fixed-Rate Mortgage History



From a longer historical standpoint, prevailing mortgage rates remain low even in the 5% range, but the pace of the increase certainly provides a "sticker shock" for potential buyers calculating their hypothetical mortgage payments. Using the March median sale price of an existing home ($375,300), and assuming a 10% down payment, the typical monthly mortgage payment is up nearly $430 or 30% based on the year-to-date rise in mortgage rates alone. From a year ago and accounting for the change in the median home price, the monthly mortgage payment is up nearly $620 or 49%. Early 1980, when the federal funds rate had been hiked to more than 19% from around 10% the year prior, is the only period in history where the combined impact of rising home prices and mortgage rates briefly exceeded the current episode (Figure 2).

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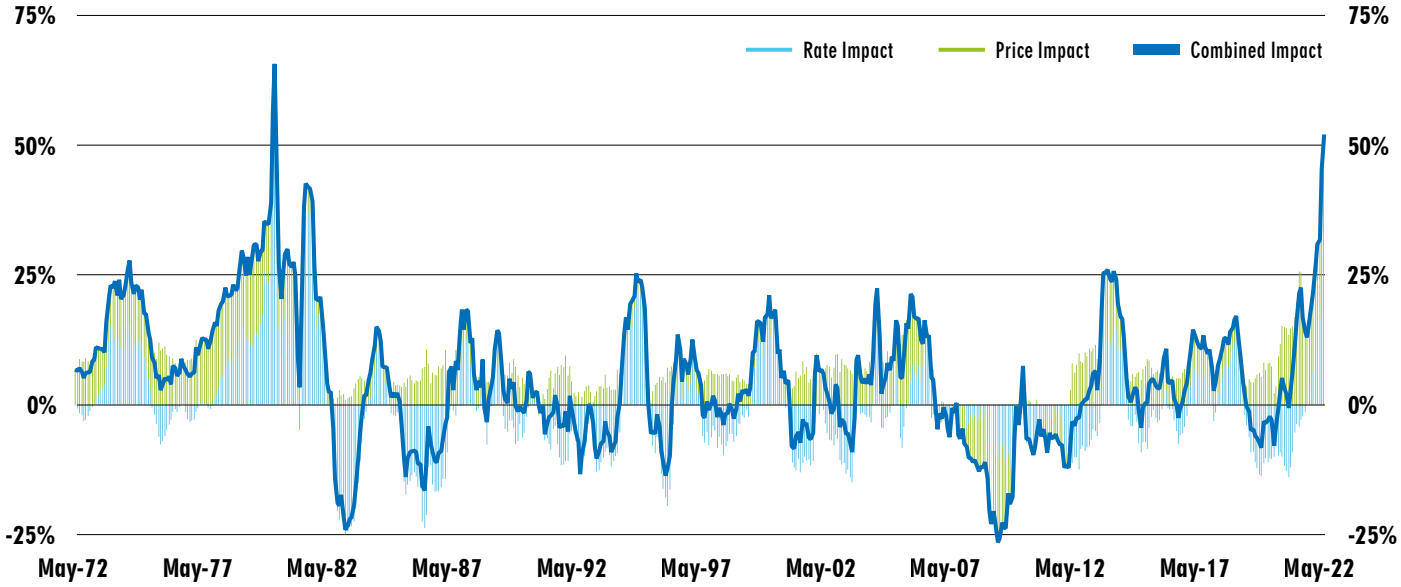
Catching up on an Eventful First Quarter *(continued from page 3)*

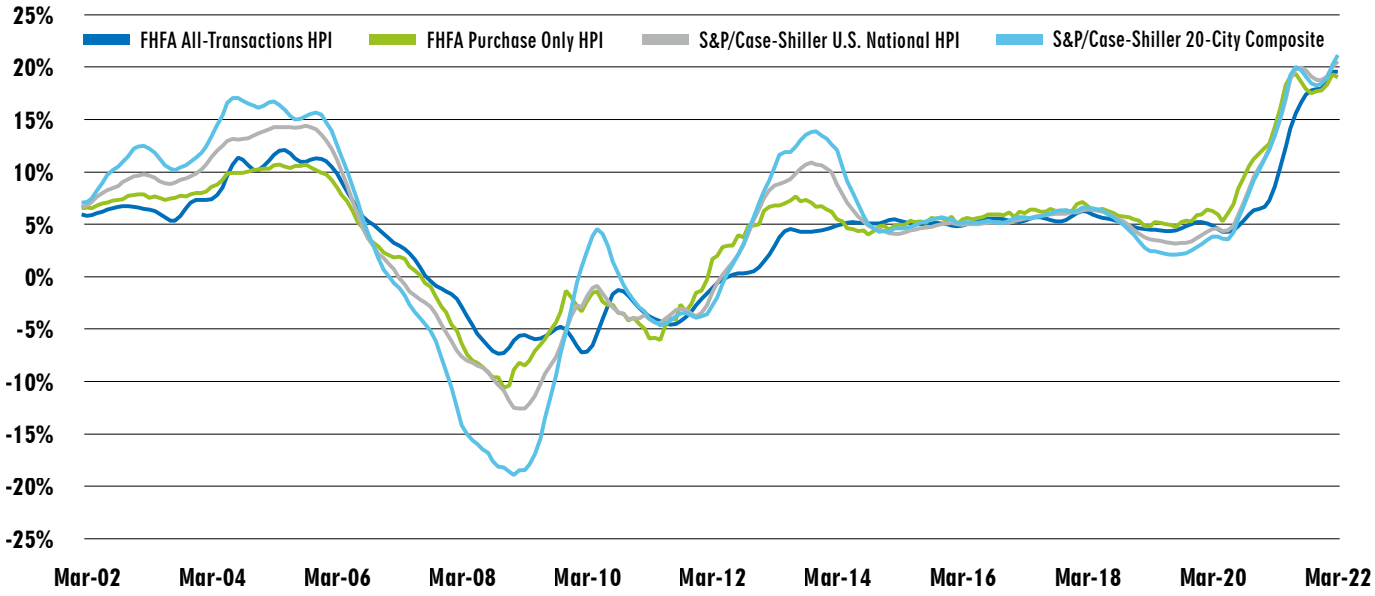
Figure 2: Year-over-Year Change in Mortgage Payment Due to Home Prices and Mortgage Rates



Sources: *Freddie Mac PMMS/Arch MI*

Home-price growth also surprisingly reaccelerated early this year, as the Standard & Poor's (S&P) Case-Shiller U.S. National House Price Index climbed to 21.2% year-over-year through March, up from 18.8% through the end of 2021 and setting a new record high (Figure 3).

Figure 3: Year-over-Year Home-Price Growth



Sources: *FHFA/S&P/Case-Shiller*

Rate-lock periods have likely protected most homebuyers from sharply higher rates through the first quarter of 2022 and we accordingly expect to see the impact of higher rates begin to materialize over the summer. Additionally, some of the recent acceleration in home-price growth was likely related to buyers attempting to secure a home ahead of rising rates. Although we expect the rapid deterioration in affordability to slow home sales and price growth over the remainder of the year, a strong labor market, attractive demographics and the persistency of work-from-home flexibility suggest demand will remain rather robust in the years ahead.

There will of course be regional divergences in terms of both price and demand trends and one theme worth bearing in mind is the "donut effect" — essentially the shift in homebuyer preferences from core city centers to suburban and exurban areas. This shift in preferences is likely to continue, as moving further away from core job centers — basically enduring a longer commute for more affordable housing — is one of the simplest ways for potential homebuyers to offset some of the rise in homeownership costs. The predominance of hybrid work models for office-using jobs limits the burden of longer commutes as workers typically only need to go into the office a few days per week.

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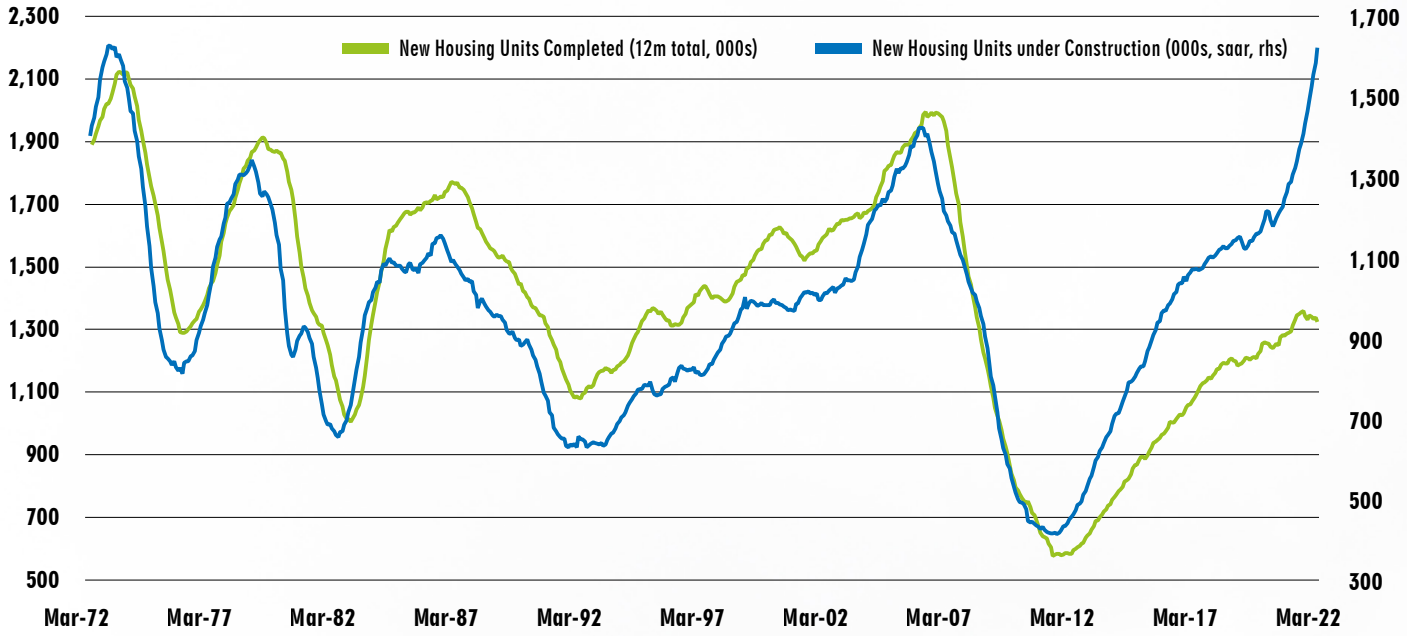
Catching up on an Eventful First Quarter *(continued from page 5)*

Aside from structural factors driving our near-to-medium term housing outlook, a near-record-low level of homes for sale suggest that home-price growth will remain positive going forward. The stock of existing homes for sale ended 2021 at about 1 million units (seasonally adjusted) and remains around that level in April. It would take 2.1 months to sell the current inventory of homes for sale at the current pace of sales (5.61 million seasonally adjusted annualized rate), up slightly from 2.0 months at the end of 2021 but still well shy of the roughly five months' supply representative of a balanced market. Starkly stated, the inventory of homes available for sale would need nearly 1.2 million additional units to reach a balanced state, more than double the current level.

As we mentioned above, higher rates should lead to a moderation in the pace of home sales, which should also allow inventory levels to gradually rise over the year. Two potential headwinds for this scenario include 1) the negative feedback loop of potential home sellers being reluctant to list their homes due to the limited inventory of homes they could purchase and 2) the fact that the typical mortgage rate for current homeowners is in the low 3% range and thus home sellers would need to finance their new home at a much higher prevailing rate. One caveat to the second point is that retirees, whose numbers are on the upswing, are generally less rate-sensitive as they typically are able to purchase homes with cash from the sale of a prior home or retirement savings.

The new-home construction market is unlikely to help alleviate the broader housing shortage this year as homebuilders continue to face numerous challenges. Labor and material shortages remain top concerns for builders while balancing their ever-growing backlog of uncompleted inventory (Figure 4). So far, builders have been able to pass on rising costs to homebuyers with few signs that cancellation rates are about to head meaningfully higher. The months' supply of completed new homes is just 2.8 months as of April, well below the typical pre-pandemic balanced market average of roughly 4 months. Much like with existing homes, some easing of demand will help bring the new-home sales market back toward balance by the end of year.

Figure 4: New Construction Activity by Stage of Construction



Sources: *U.S. Census Bureau/Arch MI*

Overall, the housing market is well-positioned to weather the headwinds building on the horizon, given structurally sound underlying demand and responsible underwriting standards. Although we do expect some easing on the demand side, this would be beneficial to the long-term health of the market and bring some balance, allowing supply to begin catching up to demand.

Are Demographics Destiny?

A question that we often get is "how much was housing demand pulled forward by the pandemic?" The question alludes to a hypothesis that the recent surge in homebuying was temporary and that the pace of sales will soon slump to below the pre-pandemic pace as buyers who would have otherwise purchased a home in 2022 instead made their move during the pandemic. Based on our analysis, we find that there was only a modest amount of demand pulled forward by the pandemic.

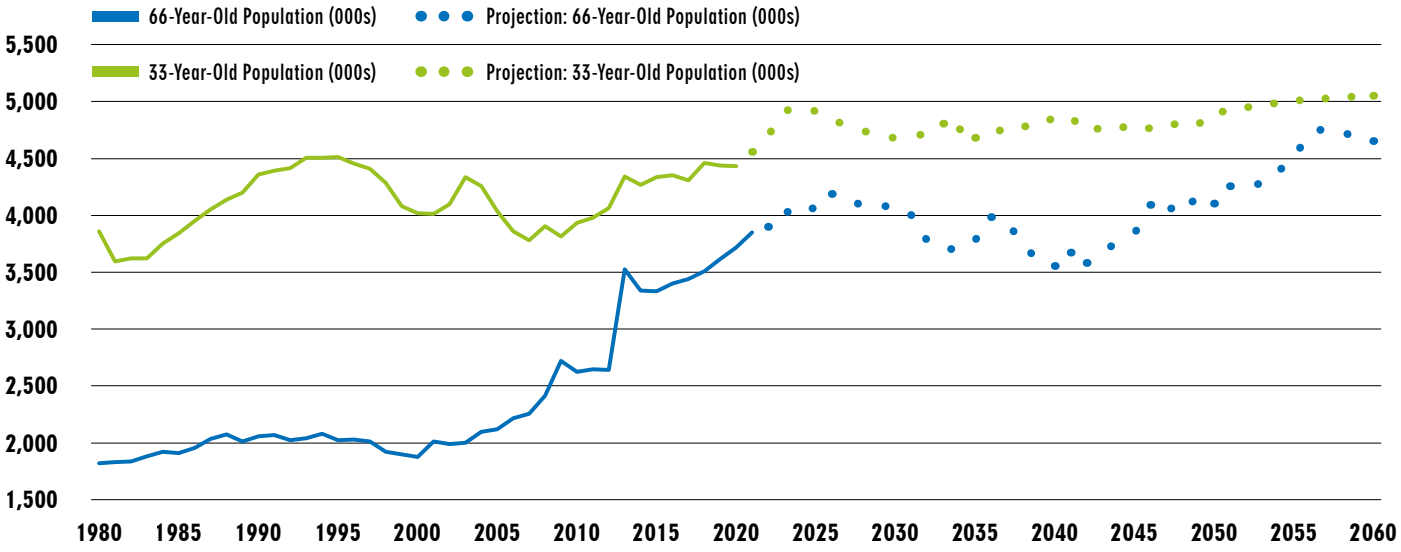
To answer this question, we first need to establish an underlying, sustainable level of demand that isn't impacted by cyclical or market factors. When thinking about a sustainable level of demand for existing homes, it is important to consider long-term trends that would prompt 1) a current homeowner to sell a home and 2) a renter to become a first-time homebuyer.

As a proxy for the first category, we suggest considering the demographic with the highest share of homeownership approaching a big life event: recent retirees. The homeownership rate for households headed by someone over the age of 65 averaged nearly 80% over the past year, so any recent retirees looking to move would likely prompt a home sale. While the average retirement age is around 62 years old, we looked at the number of people turning 66 each year to allow for some settling-in time between typical retirement age and a home-sale transaction.

According to the National Association of REALTORS® (NAR), half of homebuyers over the age of 66 cited either moving closer to friends or family, downsizing or retirement as the primary reason for their home purchase in 2021, compared to 5% or less citing the same reasons for homebuyers under the age of 40. Instead, more than half of under-40 homebuyers cited either a desire to own their home, a life event (e.g., marriage, birth of a child) or a job relocation as the primary reason for buying a home. This age group includes most first-time homebuyers, who are typically in their young 30s. As a proxy to capture this key demographic, we considered the number of people turning 33 each year.

Looking first at the younger of these two key age groups for existing home sales, we see that the 33-year-old cohort was generally trending down after peaking in the mid-1990s to a trough around 2007–2009 (Figure 5). Since bottoming around the peak of the housing crisis, the 33-year-old cohort has surged higher and just reached 4.5 million in 2021, matching the prior peak from the mid-

Figure 5: Historical and Projected Key Age Cohort



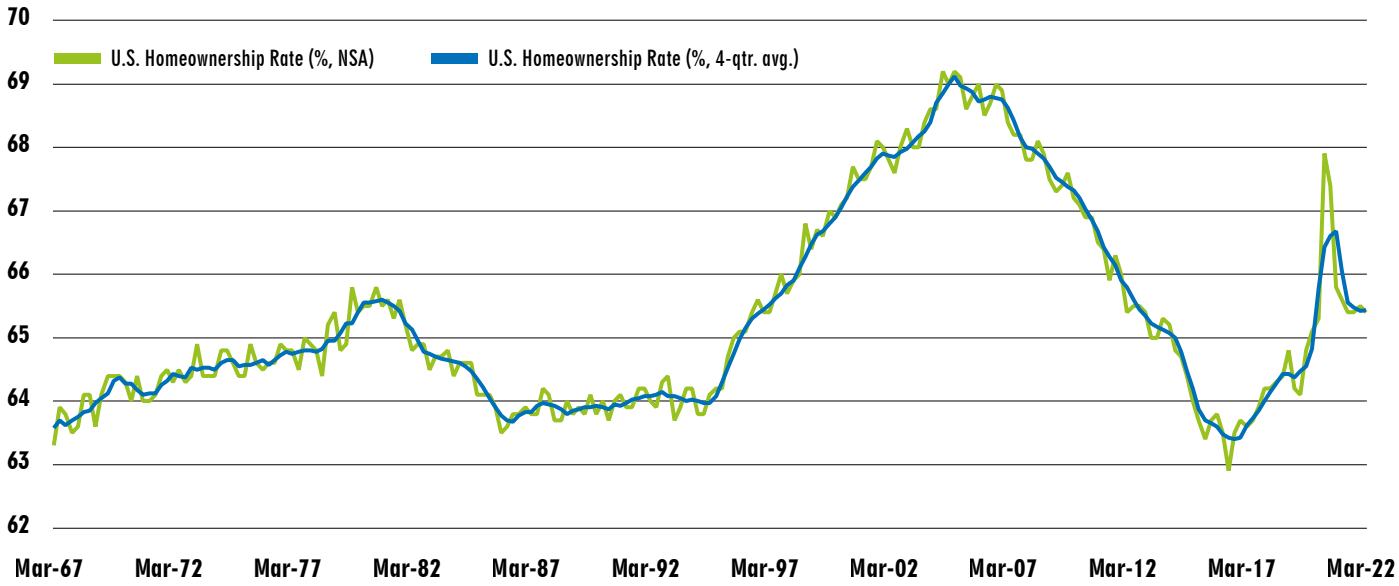
Sources: *U.S. Census Bureau/Arch MI*

1990s. Going forward, the number of Millennials turning 33 each year is expected to continue climbing and stabilize in the high 4 million to low 5 million range.

At the other end of the spectrum, the 66-year-old cohort was relatively small in comparison to the 33-year-old cohort from 1980 through the early 2000s. Then, the Boomer generation started to reach retirement age en masse in the late 2000s, climbing from roughly 2 million just before the housing crisis to a peak of 3.8 million in 2021. The number of Boomers reaching retirement age should rise a bit further to the low 4 million range over the next decade, then moderate a bit the next decade until Millennials arrive in even greater numbers 30 years down the road.

Now that we've laid out the demographic backdrop for two key homebuyer groups, another fundamental driver of existing home sales — and new-home sales for that matter — is the number of people choosing to own a home instead of renting. Changes in tenure preferences over time is captured by the homeownership rate, which is simply the share of total households that are owner-occupied. The homeownership rate had climbed from the low 60% range in the early 1990s to a peak of roughly 69% in 2005 just before the housing crisis (Figure 6) as homeownership was made more accessible by extremely loose mortgage credit standards.

Figure 6: U.S. Homeownership Rate History



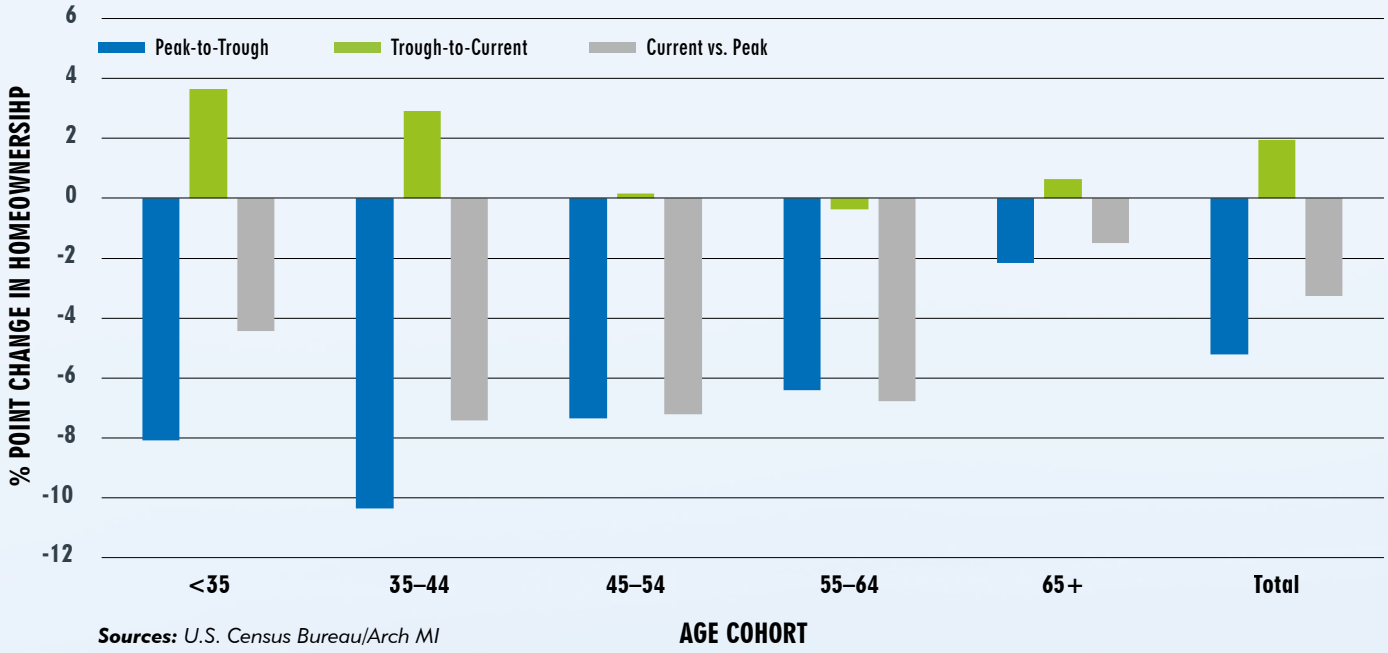
Sources: *U.S. Census Bureau/Arch MI*

As the housing crisis unfolded, mortgage credit tightened quickly, drying up much of the artificial demand created by the previously loose standards and the homeownership rate declined, almost as rapidly as it had climbed, to a trough of about 63% by 2016. In the years since, homeownership has experienced a rebound back to just over 65% as of 1Q22, driven primarily by the two demographic groups we covered above: first-time homebuyers and retirees. Since the trough in 2016, homeownership has climbed by nearly 4 percentage points among households headed by someone under the age of 35, about 3 percentage points for the 35–44 cohort, and a bit under 1 percentage point for the 65-and-over cohort (Figure 7).

(continued on page 10)

Are Demographics Destiny? *(continued from page 9)*

Figure 7: U.S. Homeownership Rate History by Age Cohort



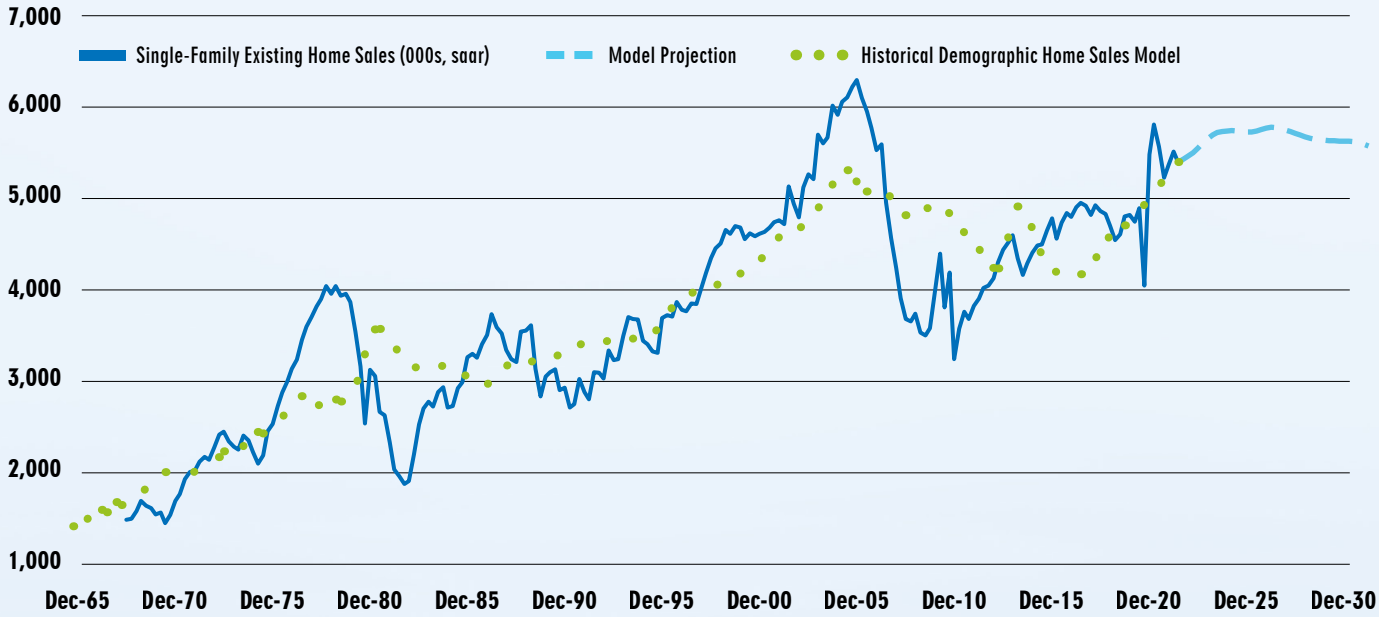
Sources: *U.S. Census Bureau/Arch MI*

The Surge in Housing Demand Wasn't Just a Pandemic Artifact

We brought all of these factors together in a simple model to establish an underlying estimate of fundamental demand for single-family existing home sales over time. We applied this model to single-family existing home sales instead of the broader headline measure that also includes condos and co-operative sales, as the single-family-only metric stretches back to 1968 (compared with 1999 for the combined measure). Given the slow-moving nature of these demographic drivers, we prefer a model that allows us to compare the relationship over a longer period.

This simple model explains nearly 75% of the variation in single-family existing home sales from 1968 through 2021, as you can see in Figure 8 on page 11. All three variables exhibit positive relationships with single-family existing home sales. The 66-year-old cohort contributes slightly more to existing home sales demand than the 33-year-old cohort — likely because nearly 80% of households are headed by someone in their late 60s who already owns a home and thus would be looking to sell to relocate/downsize. Additionally, every percentage point increase in the overall homeownership rate is estimated to increase single-family existing home sales by nearly 400,000 sales per year.

Figure 8: Fundamental Demand Model for Single-Family Existing Home Sales



Sources: *NAR/U.S. Census Bureau/Arch MI*

Interestingly, this simple model suggests that fundamental drivers of single-family existing home sales were already on the upswing, just as the pandemic arrived. In fact, the model estimate in 1Q20 was within about 30,000 sales, or 0.6% of total single-family existing home sales. Despite the volatility over the course of the pandemic, the model estimate was again within about 14,000 sales, or 0.3% of the actual level of sales in 1Q22. In the two years since the pandemic started, cumulative single-family existing home sales (roughly 10.6 million) have exceeded the fundamental model by only 250,000, or 2.4%. Stated simply, this suggests that there was only a modest amount of fundamental demand pulled forward by the pandemic.

Going forward, these fundamentals also suggest that demand for existing homes should remain elevated as Millennials continue to enter their prime first-time homebuying years and Boomers reaching retirement age continue to trend higher, even without any further gains in the homeownership rate (which we held flat for illustrative purposes in the projection below). In fact, the supportive demographic trends from both generations are converging right as the homeownership rate has seemingly entered a renewed upward trend over the past five years or so.

(continued on page 12)

Are Demographics Destiny? *(continued from page 11)*

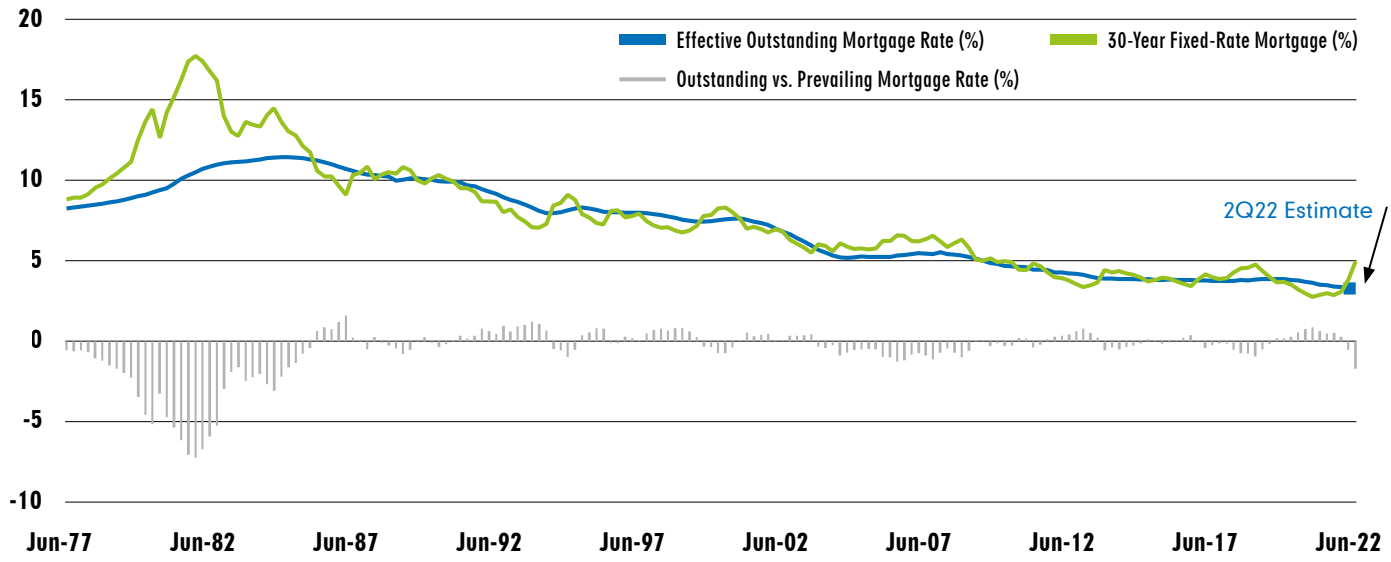
Will Higher Rates Cause the End of the Housing Boom?

The model doesn't explain all of the variation in sales activity by design and doesn't account for much of the volatility around the late 1970s/early 1980s as well as the rise and fall around the mid-2000s housing crisis. This makes sense as other factors caused housing activity to become detached from fundamentals in these periods. Some of these other factors, to name a few, could include interest rates, labor market conditions and recent home-price trends.

Taking these in reverse order, it would be reasonable to assume that periods of strong home-price appreciation could encourage existing homeowners to take advantage of their increased home equity and trade up to a larger home or better neighborhood. At the other extreme, during periods of outright price declines it would be reasonable for homeowners to wait out bad market conditions to further pay down principal and hope for a rebound in prices down the road.

Labor market conditions are fairly self-explanatory: If the economy has entered a recession and unemployment is rising, there should be less housing turnover and vice versa. Interest rates are more interesting — we could simply consider the prevailing 30-year fixed-rate mortgage, which presumably would weigh on sales when rising and vice versa. However, an important consideration is also the difference between the rates that existing homeowners have on their mortgages and the prevailing 30-year fixed-rate mortgage. Presumably, when the prevailing mortgage rate is meaningfully higher than the rate most homeowners are paying, as it is now (Figure 9), there should be fewer homeowners looking to sell.

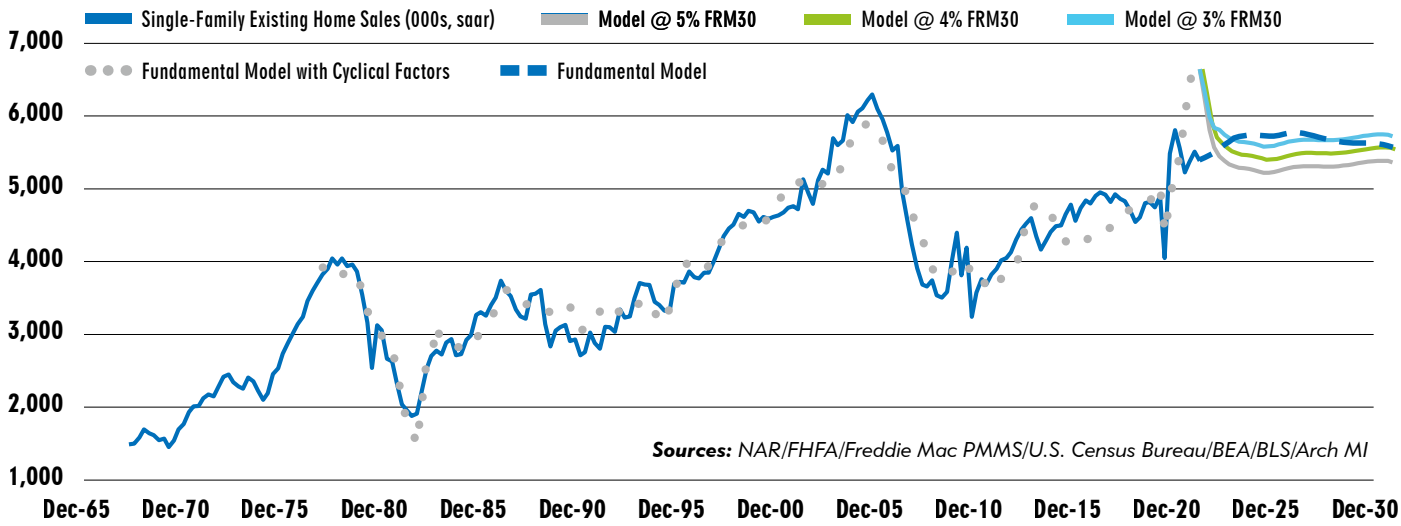
Figure 9: Effective Outstanding Mortgage Rate vs. Prevailing 30-Year Fixed-Rate Mortgage



Sources: *U.S. Bureau of Economic Analysis/Freddie Mac PMMS/Arch MI*

To illustrate the impact these cyclical factors could have on home sales, we added three variables to the fundamental demand model: annual home-price appreciation, the national unemployment rate and the difference between rates on existing homeowner mortgages and the prevailing 30-year mortgage rate. The results were significant and consistent with the logic described above, explaining more than 90% of the variation in single-family existing home sales shown by the dotted line in Figure 10 on page 13.

Figure 10: Single-Family Existing Home Sales Model: Fundamental Plus Home Prices, Unemployment and Rates



The estimated impact of the demographic factors from the fundamental model remained roughly unchanged. With the cyclical factors added, we also see that every percentage point of home-price appreciation typically boosts the pace of single-family existing home sales by about 90,000; every percentage-point increase in unemployment typically subtracts about 80,000 from the pace of sales and about 180,000 fewer sales typically occur for every percentage point that prevailing mortgage rates exceed the rate on outstanding mortgages.

The impact of home-price appreciation implies a somewhat circular process, whereby stronger price growth creates stronger home sales, which in turn creates stronger price growth, but statistical evidence suggests there is indeed some self-reinforcing causality. This circular feedback loop is effectively a representation of the momentum that can take hold in the housing market.

Comparing the model results with actual sales activity, it is readily apparent that implied demand far exceeded actual home sales. This is reflective of the shortage of homes for sale, which has limited actual sales activity and resulted in extreme competition for the homes brought to the market. In fact, the model implied demand exceeded actual activity by roughly 1.2 million sales over the course of the pandemic, about the same number of homes that we previously mentioned would need to be added to the inventory of existing homes for sale to bring the market back into balance.

Going forward, with prevailing mortgage rates now well above 5% and the average effective outstanding mortgage rate closer to 3.3%, the model suggests the difference of 200 bps should slow sales by roughly 360,000. This is quite the swing from 4Q21, when the prevailing mortgage rate averaged 3.1% and the average outstanding rate was 3.4%. The impact of the increase in rates on home sales can be seen in the shift from the light-blue line in Figure 9, which reflects the model output with a 3% mortgage rate going forward, compared to the gray line, which reflects the model output with a 5% mortgage rate going forward.

Even more meaningful going forward is the expected slowdown in home-price appreciation, which if it were to slow by 10 percentage points, or from 20% year-over-year to 10%, would cool home sales by about 800,000. As mentioned above, demographic fundamentals point to stronger demand going forward (green dashed line on Figure 9), which offsets some of these building headwinds. Putting all these factors together suggests that demand should cool going forward, but that sales should stabilize at a level somewhat above the pre-pandemic pace.

Donuts in Housing Aren't Just a Realtor Treat

We have now established that the fundamental drivers of housing demand look positive for the near-term outlook, but this robust demand is obviously not evenly distributed across the nation. This was true prior to the pandemic and even more so now as the pandemic has suddenly increased the flexibility for most office workers to work from home several days per week or even full-time. With limited and lagged data available on population and migration trends, we turn to a simple metric to evaluate where demand has most outpaced supply since the beginning of the pandemic: home prices.

Boston Cream or Cronut?

While home prices and interest rates have surged, potential homebuyers have had few measures to keep their housing costs within budget other than buying a smaller home or buying further away from job centers. The increased flexibility to work from home and limit commuting days has made the latter option more attractive since the onset of the pandemic. As suburban and exurban locales generally offer lower prices per square foot than city centers, potential homebuyers making this tradeoff can achieve their desire for more space by tolerating a longer commute for a few days per week. The hollowing out of demand for core city centers and increase in demand for the outer regions surrounding them has been dubbed the "donut effect."

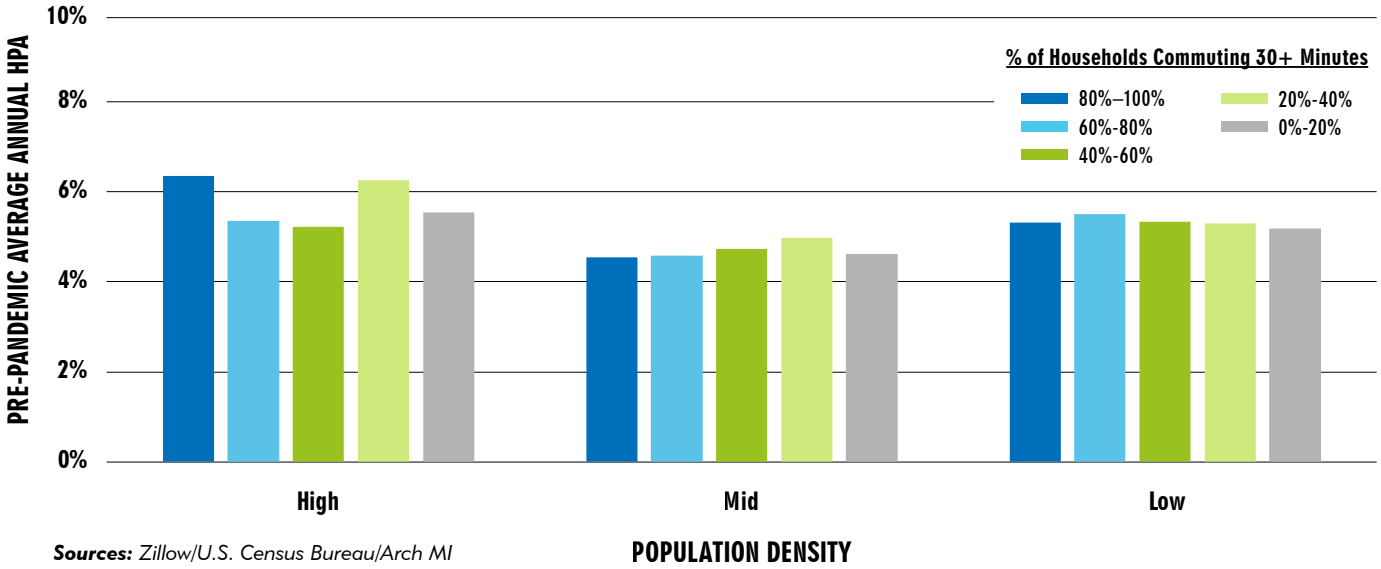
To assess this potential donut effect, or the impact of this newfound work-from-home flexibility, we evaluated the home-price appreciation (HPA) before and after the onset of the pandemic across ZIP codes based on Zillow's Home Value Index (ZHVI).[1] The ZHVI is a smoothed, seasonally adjusted measure of the typical home value and market changes across a given region and housing type. It reflects the typical value for homes in the 35th to 65th percentile range. We defined pre-pandemic price growth as the average annual change in home prices from December 2016 through December 2019 and the post-pandemic price growth as the average annualized change from December 2019 through March 2022. We evaluated nearly 25,000 ZIP codes with data available during both periods.

For classifying ZIP codes, we leveraged the same definition as those detailed in Stanford University's publication, "The donut effect: How COVID-19 shapes real estate."[2] ZIP code density buckets are accordingly segmented with the top 10 percentile by population density (population/land area in each ZIP code) assigned to the "high" bucket, the 50th to 90th percentile to the "mid" bucket, and the "low" bucket captures all ZIP codes below the 50th percentile.

Lastly, to reflect the impact of commuting, we considered the share of workers in each ZIP code whose typical commute exceeds 30 minutes according to the 2020 American Community Survey 5-Year Estimates. To segment the ZIP codes into buckets of commuting intensity, we simply created five ranges for the share of households with typical commutes longer than 30 minutes: 0–20%, 20–40%, 40–60%, 60–80% and 80–100%.

A look at the average annual home-price growth across ZIP codes during the pre-pandemic period reveals very little variation by population density or commuting intensity bucket (Figure 11). This was a relatively stable period for the housing market, with home prices steadily increasing by about 5% per year for most ZIP codes, with only ZIP codes in high-population-density buckets with 20–40% and 80–100% of workers commuting longer than 30 minutes averaging more than 6% home-price growth per year.

Figure 11: Pre-Pandemic Average Annual Home-Price Growth by ZIP Code



Sources: *Zillow/U.S. Census Bureau/Arch MI*

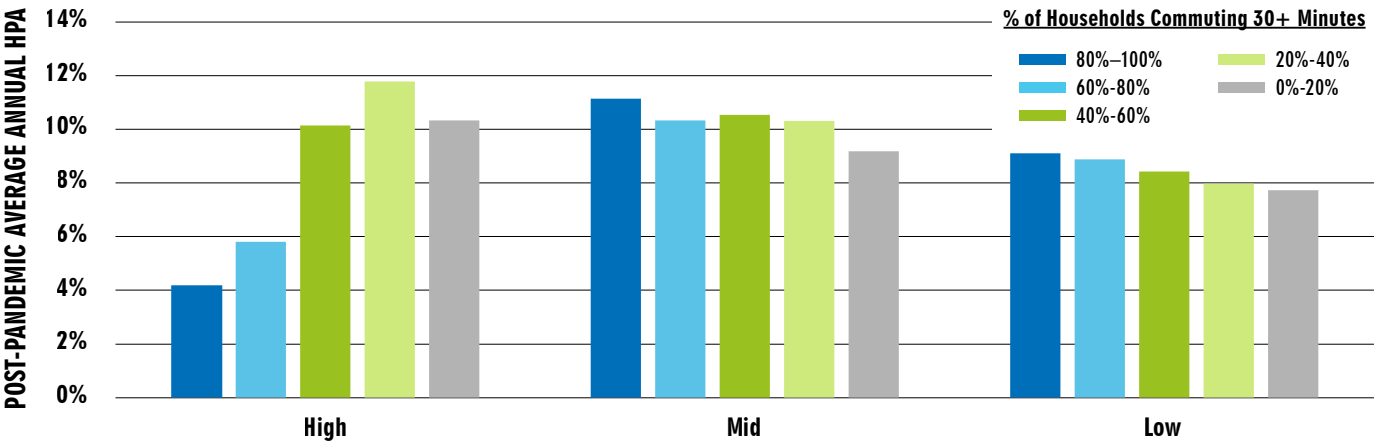
[1] https://www.zillow.com/research/zhvi-user-guide/
[2] https://siepr.stanford.edu/publications/policy-brief/donut-effect-how-covid-19-shapes-real-estate

(continued on page 16)

Donuts in Housing Aren't Just a Realtor Treat *(continued from page 15)*

Looking at the post-pandemic period, typical home-price growth remained positive across all of the ZIP code buckets we evaluated. However, home-price growth was strongest in the mid- and low-population-density ZIP codes with the greatest share of workers who have longer than 30-minute commutes, as well as high-population-density ZIP codes with fewer workers commuting longer than 30 minutes (Figure 12).

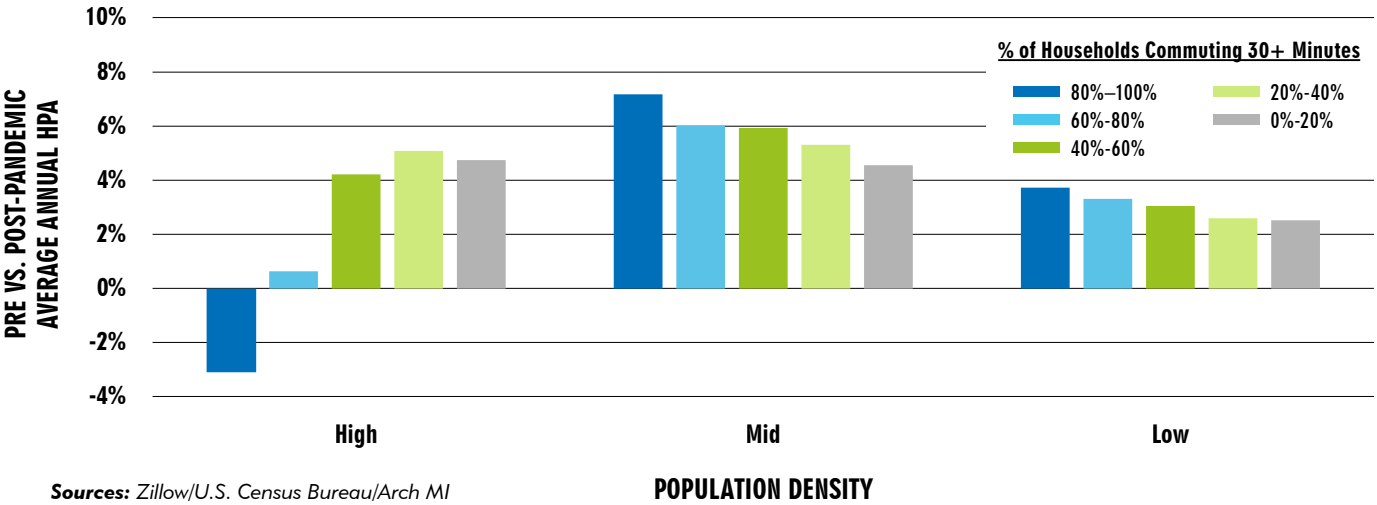
Figure 12: Post-Pandemic Average Annual Home-Price Growth by ZIP Code



Sources: *Zillow/U.S. Census Bureau/Arch MI*

Considering the difference in home-price growth between the pre- and post-pandemic periods provides a clearer picture of the impact of the pandemic on homebuyer preferences regarding population density and commuting. Although home-price growth accelerated in 90% of ZIP codes, the acceleration was concentrated in mid-population-density ZIP codes with a higher share of workers with long commutes (Figure 13). Interestingly, home-price growth decelerated sharply for the typical high-population-density ZIP codes with a high share of workers who have longer than 30-minute commutes.

Figure 13: Pre vs. Post-Pandemic Average Annual Home Price Growth by ZIP Code

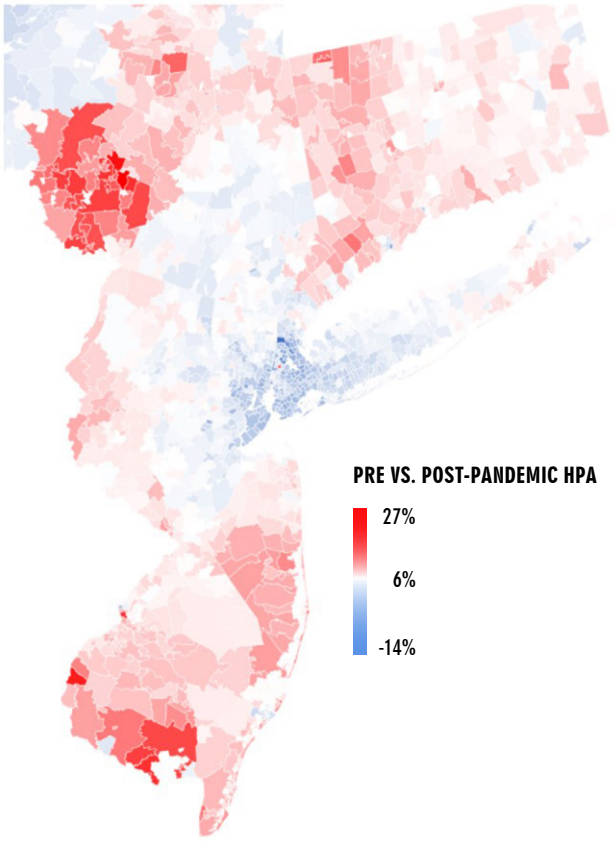


Sources: *Zillow/U.S. Census Bureau/Arch MI*

The change from generally consistent home-price growth across ZIP codes pre-pandemic to a sharp acceleration in home-price growth for less dense ZIP codes with longer commutes and sharp deceleration for high-density ZIP codes with longer commutes is evidence of a stark change in homebuyer preferences. The "donut effect" is even more apparent when viewing the change in home-price appreciation on maps of major metro regions such as New York (Figure 14), Boston (Figure 15) and San Francisco (Figure 16).

We are likely still in the early stages of this shift in homebuyer preferences as the limited inventory has undoubtedly dissuaded some potential homebuyers from making the move out of dense urban areas. Given the still rapidly changing environment for hybrid and remote work and a still-constrained housing inventory, we plan to closely monitor these trends going forward for any indications of a reversal.

Figure 14: New York Regional Donut Effect



Sources: *Zillow/Arch MI*

Figure 15: Boston Regional Donut Effect

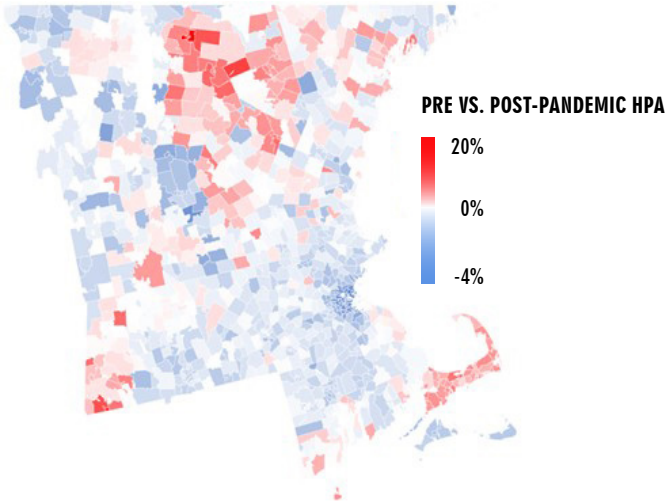
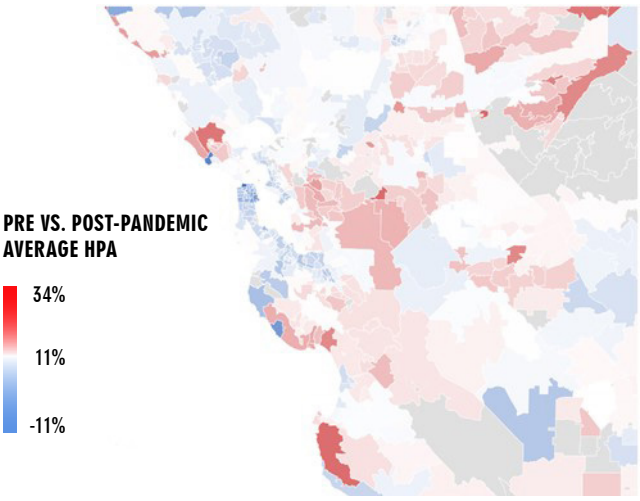
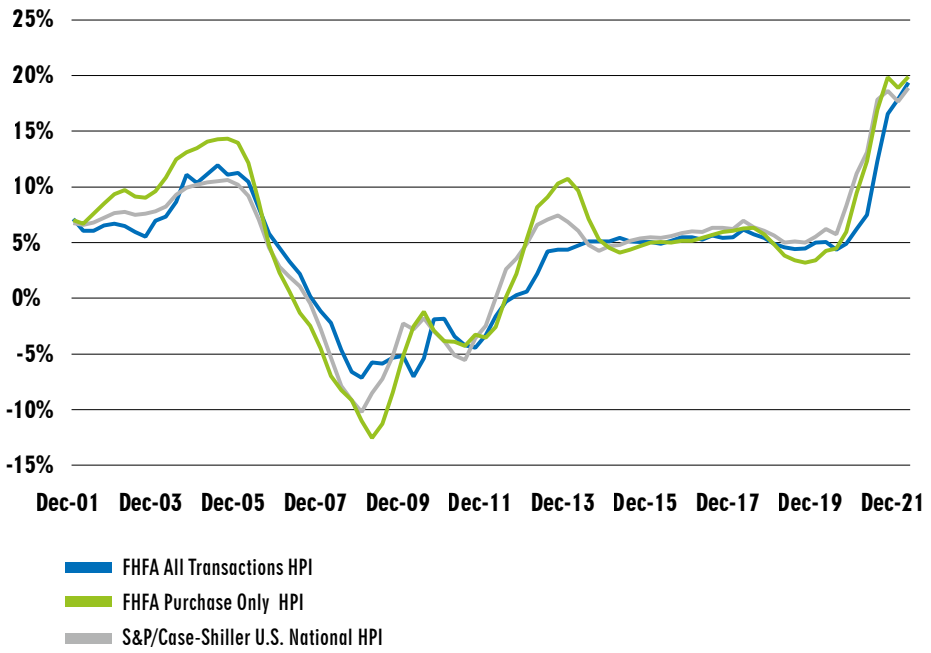


Figure 16: San Francisco Regional Donut Effect



Housing and Mortgage Market Indicators

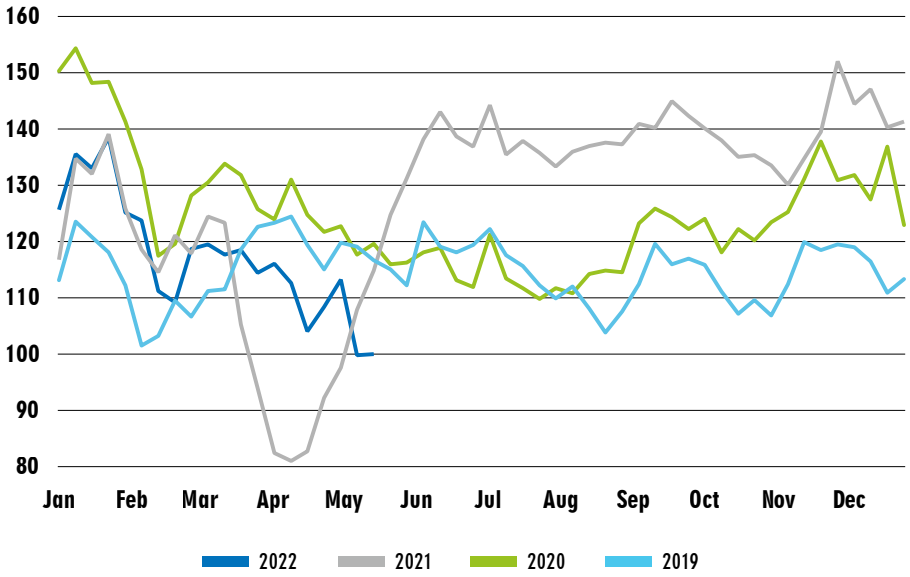
YEAR-OVER-YEAR PERCENTAGE CHANGE IN HOME PRICES



National home prices have re-accelerated after slowing from last summer's record pace. Home-price growth in Q1 2022 was strong across all three indices, with the Federal Housing Finance Agency (FHFA) Purchase-Only Index up 19.0% year-over-year — topping the previous record of 18.6% from Q3 2021. While these home-price indicators differ in methodologies and data sources (the FHFA only uses GSE loans, while the Case-Shiller index includes many jumbo and other types of loans), they all reflect record year-over-year price gains for the quarter.

Sources: *S&P Case-Shiller/FHFA/Moody's Analytics/Arch MI*

MBA MORTGAGE PURCHASE APPLICATION INDEX



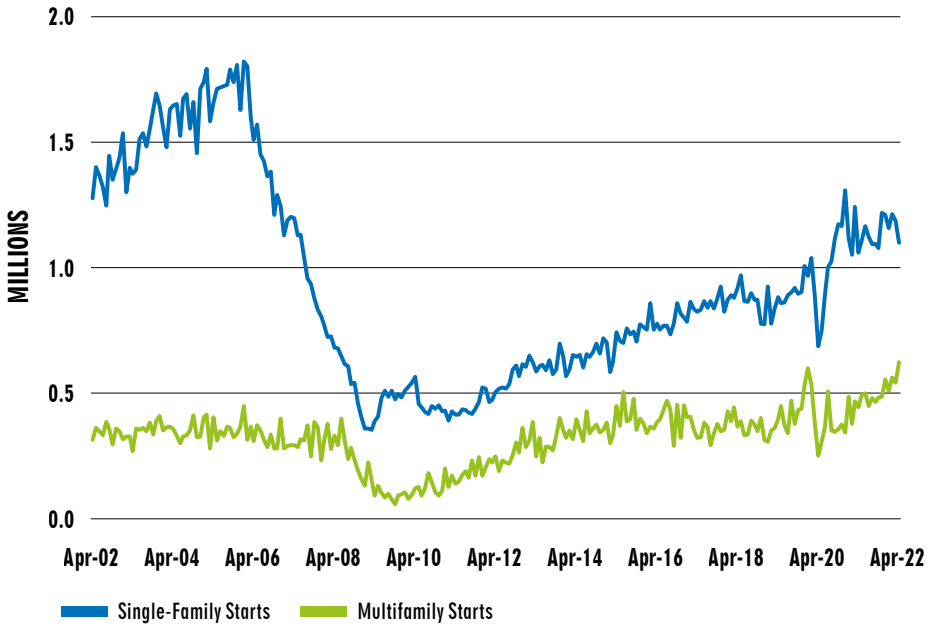
As of May 2022, mortgage purchase applications are down 13% compared with a year ago, and down 12% from May 2019 levels amid the increase in mortgage rates. The rise in mortgage rates has been sharp so far in 2022 and although we do expect mortgage rates to come down modestly in the next few quarters, they will remain a headwind for purchase activity despite a strong demographic and labor market backdrop.

Note: Index rebased so that current activity level = 100

Sources: *Mortgage Bankers Association (MBA)/Arch MI*

Housing and Mortgage Market Indicators

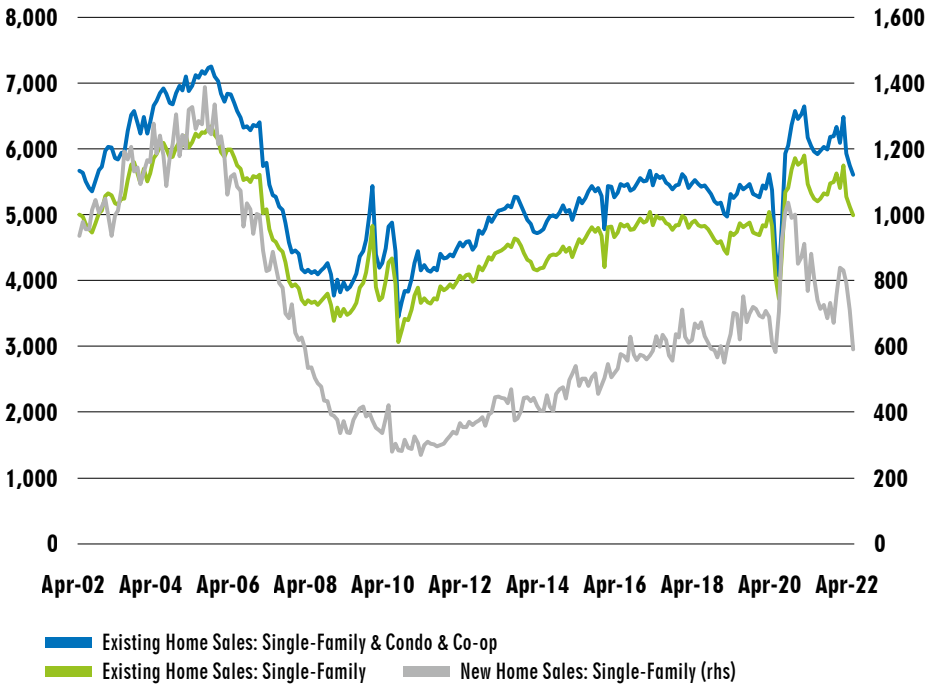
HOUSING STARTS, IN THOUSANDS — SEASONALLY ADJUSTED ANNUAL RATE



Single-family housing starts reached their highest level since 2007 in December 2020 at 1.3 million units (seasonally adjusted annual rate) and have remained elevated at about 1.1 million units as of April 2022. Despite supply constraints impacting construction activity, the current pace of single-family housing starts is about 20% above the pre-pandemic pace. Additionally, the pace of multifamily starts increased to about 624,000 units (annualized rate) in April, about 40% above the pre-pandemic pace.

Sources: *U.S. Census Bureau/Moody's Analytics/Arch MI*

NEW AND EXISTING HOME SALES, IN THOUSANDS — SEASONALLY ADJUSTED ANNUAL RATE

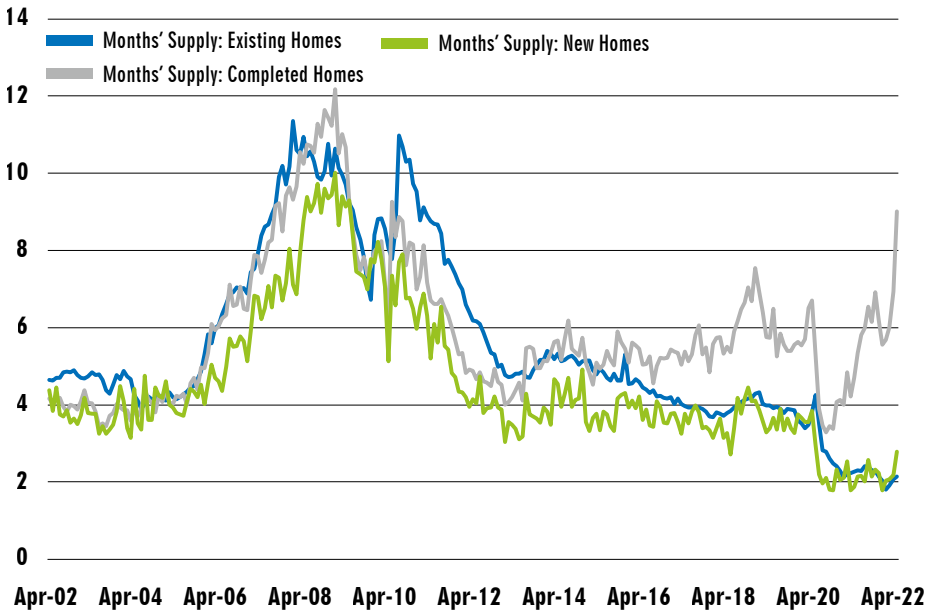


Sales of existing homes (including single-family, condo, and co-ops) totaled 6.1 million units in 2021, the highest since 2006. Sales have cooled in 2022 with the April figure down 8% from 2021 to a 5.6-million-unit pace. New-home sales have also eased from a strong 2021 amid labor and supply chain constraints, which have caused homebuilders to hold back sales to manage a growing backlog of homes under construction. Existing home sales are based on the closing of contracts signed one to two months earlier, while new-home sales are counted at the time of signing.

Sources: *NAR/U.S. Census Bureau/Arch MI*

Housing and Mortgage Market Indicators

MONTHS' SUPPLY OF HOMES FOR SALE

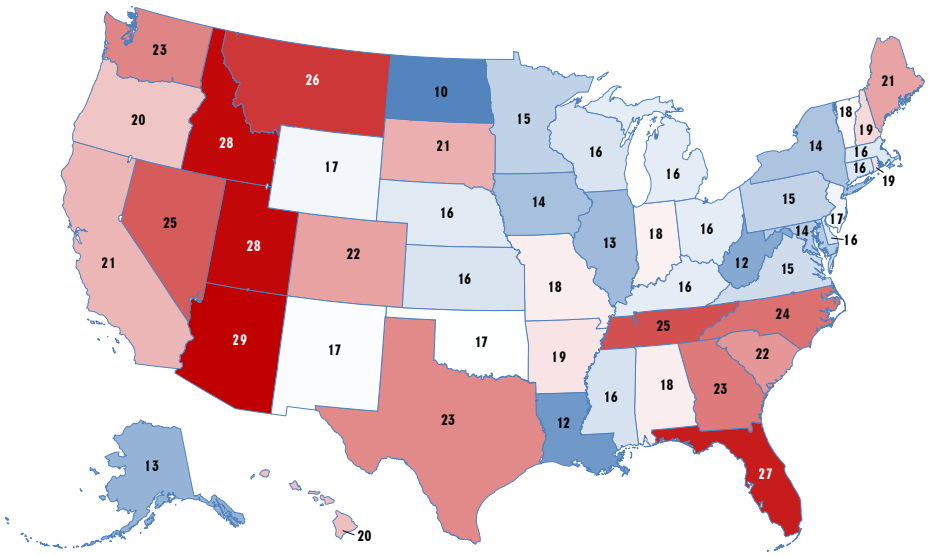


The inventory of homes for sale has increased, but remains near record lows. The months' supply of existing single-family homes for sale (total seasonally adjusted listings ÷ last month's seasonally adjusted annualized sales pace) was 2.1 months as of April 2022, down from an average of 2.3 months in 2021 and the pre-pandemic average of 4.5 months. Meanwhile, the months' supply of completed new homes for sale was to 2.8 in April, up slightly from an average of 2.1 months in 2021 but down from the pre-pandemic average of roughly 4 months.

SA stands for Seasonally Adjusted.

Sources: *NAR/Moody's Analytics/Arch MI*

HOME-PRICE GROWTH BY STATE: YEAR-OVER-YEAR (%)



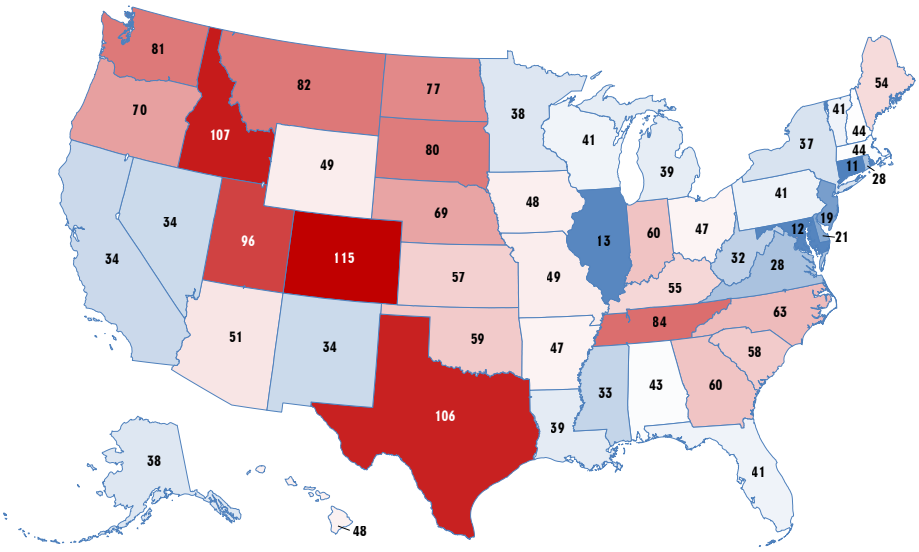
As of Q1 2022, home prices increased in all 50 states over the past year and also accelerated in all 50 states compared with the prior year. The fastest growth in home prices was in Arizona (29%), Utah (28%), Idaho (28%), Florida (27%) and Montana (26%). Meanwhile, the slowest growth occurred in the District of Columbia (10%), North Dakota (10%) and Louisiana (11%).

SA stands for Seasonally Adjusted.

Sources: *Federal Housing Finance Agency All-Transactions House Price Index (FHFA HPI®)/Arch MI*

Housing and Mortgage Market Indicators

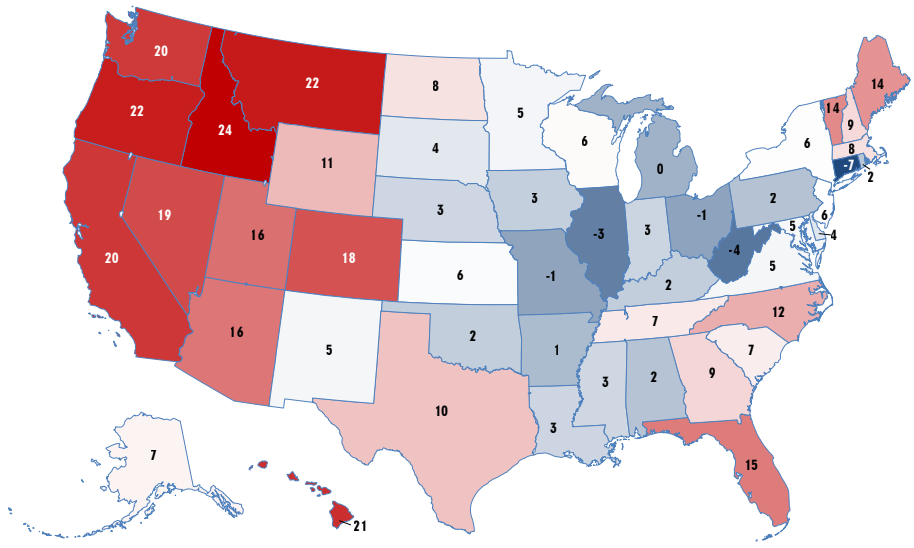
HOME-PRICE GROWTH SINCE PRIOR PEAK



Strong home-price appreciation over the past year resulted in home prices exceeding their prior peaks in all 50 states in the first quarter of 2022. Cumulative home-price growth has varied widely since prices last peaked around 2006 (we measure since the peak for each state, which varied around 2006/2007). The largest cumulative home-price growth since the prior peak is in Colorado (115%), followed by Idaho (107%) and Texas (106%), which have increased more than twice as fast as the national average of 52%. This chart is intended to aid understanding of market strength since the prior downturn and doesn't indicate any overvaluation since it doesn't account for changes in income or reasonableness of prices at their prior peak.

Sources: *FHFA/Arch MI*

HOMEOWNERSHIP COST-TO-INCOME RATIO CHANGE VS. 1990–2003 AVERAGE

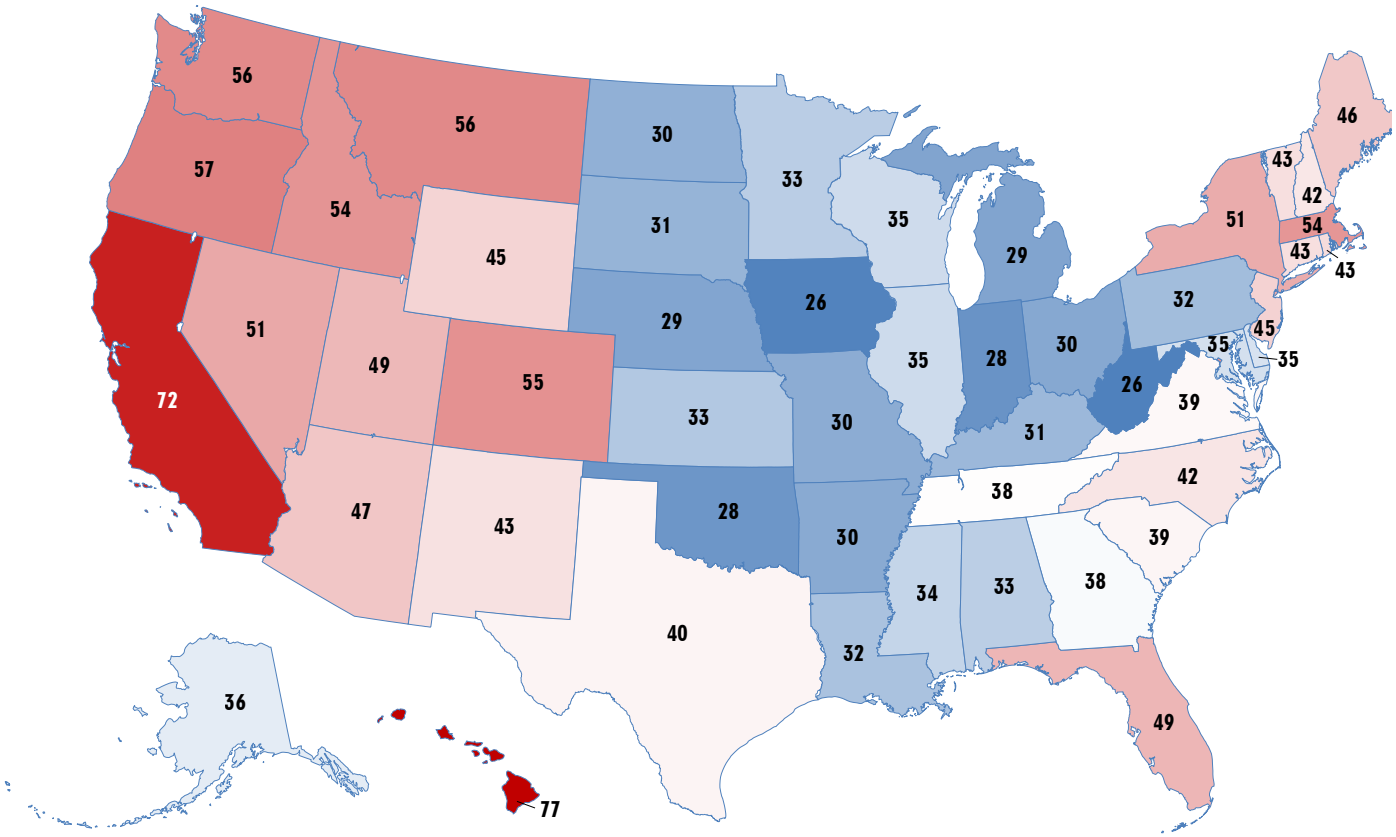


Affordability is now worse than historical norms in all states but four, with the Northwest and Mountain West generally the least affordable along with Florida, Vermont, and Hawaii. This map shows how affordability differs now compared to historical norms; a value of five indicates homeownership costs on today's median home requires 5% more of a borrower's income than it did during more typical market conditions (i.e., between 1990 and 2003). For the U.S., the median-priced home requires 42% of the median income, 5 percentage points above typical conditions. Idaho (24%) remains the least affordable state compared to its 1990–2003 average, followed by Montana (22%) and Oregon (22%). The most affordable markets now compared to their 1990–2003 averages include Connecticut (-7%), West Virginia (-4%) and Illinois (-3%).

Sources: *U.S. Census Bureau/Freddie Mac/ NAR/Moody's Analytics/Arch MI*

Housing and Mortgage Market Indicators

PERCENTAGE OF MEDIAN INCOME NEEDED FOR HOMEOWNERSHIP COSTS ON A MEDIAN-PRICED HOME

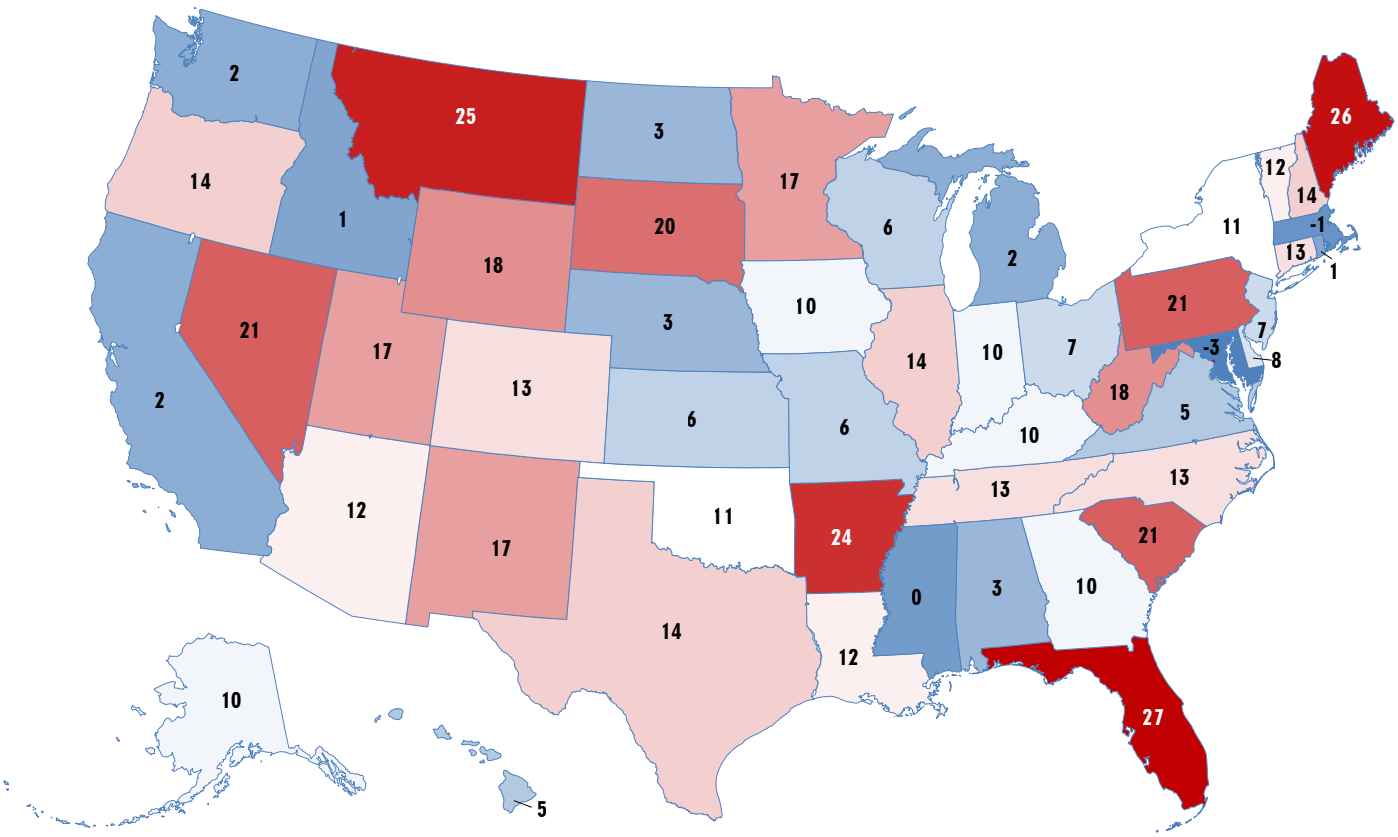


Homeownership costs remain highest relative to typical incomes in the West. Lower values of our affordability metric indicate better affordability, such as in Iowa (26%), West Virginia (26%) and Indiana (27%). Calculations are based on pre-tax median household income, a 10% down payment, escrow of annual expenses of roughly 1.5% of the initial home price (for insurance and property taxes, which we vary by state), the prevailing 30-year fixed-rate mortgage rate, plus 0.75% to cover mortgage insurance and risk add-ons, as well as roughly 1% of the initial home price to cover annual maintenance costs.

Sources: *U.S. Census Bureau/Freddie Mac/NAR/Moody's Analytics/Arch MI*

Housing and Mortgage Market Indicators

ANNUAL PERCENTAGE CHANGE IN HOUSING STARTS



The annual growth in housing starts varies widely but is generally weakest in the Northeast and strongest in the West, Midwest and parts of the Southeast. Housing starts increased the most in the District of Columbia (155%), Florida (27%) and Maine (26%). To get a clearer understanding of the trend, unlike numbers seen elsewhere, we smooth the data by calculating the growth in the 12-month moving average to dampen short-term volatility due to weather, survey limitations, etc.

Sources: *U.S. Census Bureau/Moody's Analytics/Arch MI*

State Housing and Demographic Trends

STATE	FHFA HPI (% Y/Y)		HOMEOWNERSHIP COST-TO-INCOME RATIO (%)	
(Sorted alphabetically)	Q1 2022	YEAR AGO	Q1 2022	VS 1990–2003 AVG
Alabama	18.3	7.7	33	2
Alaska	13.1	4.2	36	7
Arizona	28.6	12.7	47	16
Arkansas	18.7	6.8	30	1
California	20.7	7.3	72	20
Colorado	21.6	7.7	55	18
Connecticut	16.1	8.8	43	-7
Delaware	16.0	7.6	35	4
District of Columbia	10.1	4.7	54	14
Florida	27.4	9.2	49	15
Georgia	23.3	8.2	38	9
Hawaii	20.3	3.3	77	21
Idaho	28.3	16.7	54	24
Illinois	13.5	4.1	35	-3
Indiana	18.1	7.9	28	3
Iowa	13.8	4.0	26	3
Kansas	15.9	7.0	33	6
Kentucky	16.4	6.9	31	2
Louisiana	11.5	4.1	32	3
Maine	21.4	10.8	46	14
Maryland	14.5	6.4	35	5
Massachusetts	16.2	7.1	54	8
Michigan	16.4	7.6	29	0
Minnesota	14.9	6.4	33	5
Mississippi	15.8	4.8	34	3
Missouri	18.2	6.6	30	-1
Montana	26.2	9.9	56	22
Nebraska	16.3	5.9	29	3
Nevada	24.6	8.7	51	19
New Hampshire	19.1	10.1	42	9
New Jersey	16.9	7.5	45	6
New Mexico	17.4	8.4	43	5
New York	14.0	7.2	51	6
North Carolina	23.7	7.9	42	12
North Dakota	10.3	2.7	30	8
Ohio	16.4	7.7	30	-1
Oklahoma	17.5	6.1	28	2
Oregon	20.0	9.4	57	22
Pennsylvania	14.9	7.3	32	2
Rhode Island	19.0	9.2	43	2
South Carolina	22.1	7.0	39	7
South Dakota	21.0	5.7	31	4
Tennessee	25.1	8.8	38	7
Texas	22.6	7.1	40	10
Utah	28.3	12.3	49	16
Vermont	17.7	8.2	43	14
Virginia	15.5	6.9	39	5
Washington	22.8	9.7	56	20
West Virginia	12.5	6.2	26	-4
Wisconsin	16.0	6.1	35	6
Wyoming	17.0	5.9	45	11
Population Weighted Total	19.5	7.5	44	9

Sources: *FHFA/BLS/U.S. Census Bureau/Freddie Mac/NAR/Moody's Analytics/Arch MI*

State Housing and Demographic Trends

STATE / LARGEST METROPOLITAN (Sorted alphabetically)	UNEMPLOYMENT RATE			POPULATION (000s)		MEDIAN HOUSEHOLD INCOME	
	FEB '22	COVID PEAK	PRE-COVID (FEB '20)	Q1 2022	% Y/Y	Q1 2022	% Y/Y
Alabama	3.0	13.7	3.4	4,939	0.2	$ 57,154	3.5
Alaska	5.3	11.9	5.2	745	1.1	$ 85,324	3.2
Arizona	3.6	13.9	5.0	7,729	2.4	$ 70,034	4.5
Arkansas	3.1	10.0	3.6	3,058	0.5	$ 54,654	4.0
California	5.3	16.1	4.1	39,993	1.0	$ 89,439	4.4
Colorado	4.0	11.8	2.8	5,891	0.8	$ 81,317	3.9
Connecticut	4.9	11.4	3.4	3,560	0.1	$ 83,675	3.4
Delaware	4.6	13.3	3.7	996	0.5	$ 74,035	3.5
District of Columbia	6.1	11.1	5.4	698	-1.3	$ 104,995	4.7
Florida	3.3	13.9	2.7	22,481	2.0	$ 65,801	3.9
Georgia	3.2	12.3	3.6	10,902	1.0	$ 66,264	3.9
Hawaii	4.2	22.4	2.2	1,414	0.3	$ 90,117	2.5
Idaho	2.8	11.8	3.0	1,865	1.1	$ 66,435	3.9
Illinois	4.8	17.4	3.8	12,607	0.1	$ 75,654	3.8
Indiana	2.3	16.8	3.4	6,780	0.2	$ 65,482	4.1
Iowa	3.5	10.5	2.6	3,151	-0.2	$ 65,762	4.0
Kansas	2.5	12.2	3.1	2,921	0.1	$ 66,757	3.9
Kentucky	4.2	16.5	4.1	4,494	0.2	$ 57,637	3.8
Louisiana	4.3	13.5	5.2	4,653	0.1	$ 54,186	3.6
Maine	4.0	9.2	2.8	1,352	0.0	$ 61,437	3.9
Maryland	5.0	9.5	4.2	6,136	0.8	$ 93,614	3.5
Massachusetts	4.7	17.1	2.9	6,914	0.2	$ 92,202	3.7
Michigan	4.7	22.7	3.8	9,966	0.0	$ 65,320	3.7
Minnesota	2.7	10.8	3.9	5,722	0.7	$ 79,291	3.8
Mississippi	4.5	15.4	5.7	2,971	0.1	$ 50,291	4.1
Missouri	3.7	11.2	3.3	6,184	0.3	$ 62,180	3.9
Montana	2.6	12.2	3.7	1,085	0.2	$ 60,288	4.0
Nebraska	2.1	8.2	3.0	1,939	0.0	$ 68,632	4.3
Nevada	5.1	28.5	4.0	3,263	2.3	$ 66,962	3.3
New Hampshire	2.7	16.2	2.7	1,384	0.8	$ 86,584	4.1
New Jersey	4.6	15.8	3.5	8,930	0.3	$ 90,977	3.1
New Mexico	5.6	9.8	5.4	2,113	0.2	$ 53,828	3.2
New York	4.9	16.5	3.9	19,303	-0.1	$ 76,692	3.2
North Carolina	3.7	14.2	3.7	10,837	1.3	$ 63,453	4.1
North Dakota	2.9	8.3	2.2	761	-0.4	$ 63,739	4.0
Ohio	4.2	16.4	4.6	11,667	-0.1	$ 63,973	3.7
Oklahoma	2.6	12.6	3.2	4,005	0.3	$ 56,597	3.3
Oregon	4.0	13.3	3.4	4,328	1.2	$ 71,758	4.0
Pennsylvania	5.1	16.5	5.0	12,777	0.0	$ 68,733	3.5
Rhode Island	3.9	18.4	3.7	1,058	0.0	$ 80,742	3.4
South Carolina	3.5	11.6	2.9	5,275	0.6	$ 60,004	4.1
South Dakota	2.6	8.8	2.6	892	-0.1	$ 65,068	5.0
Tennessee	3.4	15.9	3.6	6,978	0.8	$ 59,816	3.8
Texas	4.7	12.6	3.5	30,090	1.4	$ 69,648	3.5
Utah	2.1	10.0	2.6	3,331	1.4	$ 82,696	4.0
Vermont	2.9	14.3	2.6	627	0.3	$ 72,036	3.2
Virginia	3.2	11.6	2.7	8,729	0.9	$ 83,991	3.7
Washington	4.3	16.8	3.9	7,876	1.4	$ 85,127	4.1
West Virginia	3.9	15.5	5.1	1,771	-0.4	$ 51,687	3.5
Wisconsin	2.9	14.1	3.0	5,857	0.2	$ 68,072	3.7
Wyoming	3.6	8.6	4.9	581	-0.1	$ 69,033	3.1
Population Weighted Total	4.1	14.6	3.7	333,578	0.7	$ 72,912	3.8

Sources: *FHFA/BLS/U.S. Census Bureau/Freddie Mac/NAR/Moody's Analytics/Arch MI*

Housing and Demographic Trends for the 100 Largest MSAs

100 LARGEST METROPOLITAN	FHFA HPI (% Y/Y)		HOMEOWNERSHIP COST-TO-INCOME RATIO (%)		UNEMPLOYMENT RATE (%)			POPULATION (000s)		MEDIAN HOUSEHOLD INCOME	
	Q1 2022	YEAR AGO	Q1 2022	VS 1990–2003 AVG	FEB '22	COVID PEAK	PRE-COVID (FEB '20)	Q1 2022	% Y/Y	Q1 2022	% Y/Y
New York-Jersey City-White Plains, NY-NJ	11.4	5.3	56	3	5.6	18.5	3.6	14,182	0.0	$ 72,835	0.3
Los Angeles-Long Beach-Glendale, CA	18.9	6.9	82	24	6.3	19.2	4.4	10,290	0.9	$ 73,128	1.6
Houston-The Woodlands-Sugar Land, TX	17.8	4.6	40	12	5.1	13.8	3.6	7,344	1.4	$ 72,786	2.7
Chicago-Naperville-Evanston, IL	13.4	3.8	38	-1	4.9	18.4	4.0	7,141	0.1	$ 75,785	0.5
Atlanta-Sandy Springs-Alpharetta, GA	24.6	8.3	38	11	3.1	12.6	3.5	6,192	1.0	$ 76,686	0.4
Dallas-Plano-Irving, TX	25.2	6.5	42	11	4.1	12.3	3.1	5,282	1.4	$ 76,920	2.8
Phoenix-Mesa-Chandler, AZ	30.1	13.1	46	17	3.0	13.2	4.4	5,274	2.3	$ 65,337	0.9
Washington-Arlington-Alexandria, DC-VA-MD-WV	13.5	6.5	38	6	4.0	10.4	3.2	5,036	0.6	$ 109,503	1.7
Riverside-San Bernardino-Ontario, CA	24.4	10.4	57	18	5.6	15.8	4.1	4,767	0.9	$ 69,927	0.3
Minneapolis-St. Paul-Bloomington, MN-WI	14.7	6.5	34	5	2.7	11.4	3.5	3,720	0.6	$ 81,951	1.4
San Diego-Chula Vista-Carlsbad, CA	22.4	8.5	75	18	4.6	16.3	3.3	3,422	0.9	$ 84,183	1.9
Tampa-St. Petersburg-Clearwater, FL	29.0	10.8	48	18	3.0	13.4	2.7	3,368	1.9	$ 56,465	-1.6
Anaheim-Santa Ana-Irvine, CA	18.7	5.7	90	36	4.3	15.5	2.9	3,255	0.9	$ 96,175	2.3
Seattle-Bellevue-Kent, WA	22.6	8.0	58	18	3.4	17.0	2.6	3,189	1.3	$ 98,013	-1.1
Denver-Aurora-Lakewood, CO	21.4	7.7	52	19	4.0	12.3	2.6	3,034	0.8	$ 105,335	0.5
Oakland-Berkeley-Livermore, CA	18.3	5.6	74	10	4.5	14.9	3.1	2,895	0.9	$ 108,713	2.0
Miami-Miami Beach-Kendall, FL	23.6	8.1	74	34	3.4	15.0	1.6	2,864	1.9	$ 53,954	-1.3
Baltimore-Columbia-Towson, MD	13.7	6.3	33	6	4.8	9.6	4.2	2,859	0.7	$ 86,609	1.9
Nassau County-Suffolk County, NY	14.2	6.9	50	14	3.5	18.6	3.7	2,826	-0.1	$ 104,246	-1.3
St. Louis, MO-IL	14.2	5.5	27	-1	3.8	12.0	3.1	2,823	0.2	$ 70,154	1.8
Orlando-Kissimmee-Sanford, FL	24.2	7.6	48	19	3.6	22.1	2.7	2,750	1.9	$ 60,455	-0.9
Charlotte-Concord-Gastonia, NC-SC	25.1	8.7	44	20	3.6	13.9	3.4	2,697	1.2	$ 65,723	1.9
San Antonio-New Braunfels, TX	21.8	6.6	43	15	4.2	12.9	3.1	2,651	1.4	$ 63,708	0.7
Fort Worth-Arlington-Grapevine, TX	24.6	7.4	38	11	4.1	12.6	3.1	2,589	1.4	$ 72,944	1.8
Portland-Vancouver-Hillsboro, OR-WA	19.1	8.3	54	19	4.0	13.4	3.3	2,575	1.2	$ 82,889	0.2
Warren-Troy-Farmington Hills, MI	15.0	7.1	31	1	3.8	22.7	3.6	2,571	0.0	$ 75,080	0.1
Newark, NJ-PA	14.5	6.7	51	2	4.7	14.8	3.6	2,518	0.3	$ 83,842	0.2
Sacramento-Roseville-Folsom, CA	21.2	9.4	51	13	4.7	14.5	3.6	2,423	0.9	$ 76,440	1.3
Cambridge-Newton-Framingham, MA	15.4	6.0	53	4	4.2	15.4	2.6	2,412	0.2	$ 101,324	-1.1
Las Vegas-Henderson-Paradise, NV	26.1	7.4	55	23	5.8	32.0	4.2	2,411	2.2	$ 48,311	-2.5
Pittsburgh, PA	14.1	6.9	26	0	5.2	17.1	5.0	2,316	0.0	$ 64,062	-1.5
Austin-Round Rock-Georgetown, TX	33.3	11.8	49	17	3.5	11.9	2.7	2,315	1.4	$ 84,375	3.0
Cincinnati, OH-KY-IN	17.4	7.5	31	0	3.6	13.6	4.0	2,196	0.0	$ 65,321	1.9
Kansas City, MO-KS	18.1	8.5	32	5	3.7	12.5	3.1	2,172	0.2	$ 73,493	2.0
Philadelphia, PA	13.4	7.5	34	5	6.6	17.5	5.6	2,150	0.0	$ 55,257	-0.4
Columbus, OH	18.6	8.0	34	2	3.6	13.0	4.1	2,115	-0.1	$ 63,633	2.2
Indianapolis-Carmel-Anderson, IN	19.8	8.3	33	8	2.2	13.1	3.1	2,087	0.2	$ 63,780	0.3
Fort Lauderdale-Pompano Beach-Sunrise, FL	24.2	7.6	59	23	3.6	16.9	3.1	2,059	1.9	$ 59,990	-1.2
Boston, MA	15.3	6.9	53	6	4.6	17.3	2.8	2,042	0.2	$ 95,471	-0.4
Cleveland-Elyria, OH	15.0	7.8	29	-4	5.3	21.2	4.6	2,042	-0.1	$ 54,145	1.7
San Jose-Sunnyvale-Santa Clara, CA	14.3	1.9	90	24	3.5	12.4	2.7	2,040	0.9	$ 130,553	2.3
Nashville-Davidson--Murfreesboro--Franklin, TN	26.7	8.0	40	11	2.9	15.8	2.8	2,001	0.8	$ 67,557	0.2
Montgomery County-Bucks County-Chester County, PA	15.0	7.4	34	-1	4.0	14.1	4.0	1,983	0.0	$ 98,344	0.1
Virginia Beach-Norfolk-Newport News, VA-NC	15.5	7.2	32	3	3.6	12.9	2.9	1,788	0.9	$ 72,939	-0.1
Detroit-Dearborn-Livonia, MI	14.6	8.3	27	0	6.9	26.0	4.8	1,750	0.0	$ 51,543	-1.1
San Francisco-San Mateo-Redwood City, CA	9.5	-3.2	100	21	3.5	12.5	2.3	1,689	0.9	$ 135,208	5.7
Jacksonville, FL	25.2	9.9	41	12	2.9	11.2	2.7	1,644	1.9	$ 64,419	-1.3
Providence-Warwick, RI-MA	18.2	9.1	45	3	4.5	19.6	3.7	1,629	0.1	$ 83,756	-2.6
Milwaukee-Waukesha, WI	14.7	6.0	41	7	3.6	14.4	3.3	1,586	0.2	$ 68,630	2.4
West Palm Beach-Boca Raton-Boynton Beach, FL	27.7	8.8	56	20	3.4	14.0	3.1	1,578	1.9	$ 66,760	-0.8

Sources: *FHFA/BLS/U.S. Census Bureau/Freddie Mac/NAR/Moody's Analytics/Arch MI*

Housing and Demographic Trends for the 100 Largest MSAs

100 LARGEST METROPOLITAN	FHFA HPI (% Y/Y)		HOMEOWNERSHIP COST-TO-INCOME RATIO (%)		UNEMPLOYMENT RATE (%)			POPULATION (000s)		MEDIAN HOUSEHOLD INCOME	
	Q1 2022	YEAR AGO	Q1 2022	VS 1990–2003 AVG	FEB '22	COVID PEAK	PRE-COVID (FEB '20)	Q1 2022	% Y/Y	Q1 2022	% Y/Y
Raleigh-Cary, NC	28.3	6.5	41	14	3.0	12.3	3.3	1,440	1.3	$ 79,816	1.9
Oklahoma City, OK	18.1	5.6	26	3	2.4	13.1	2.9	1,422	0.4	$ 52,866	-0.6
Memphis, TN-MS-AR	20.4	8.3	41	9	4.9	13.2	4.4	1,377	0.6	$ 52,748	-0.5
Frederick-Gaithersburg-Rockville, MD	13.4	5.6	39	2	4.6	8.6	3.7	1,338	0.7	$ 114,191	2.3
Richmond, VA	16.8	7.5	38	10	3.5	12.0	2.8	1,325	0.9	$ 72,385	0.2
Louisville/Jefferson County, KY-IN	15.6	6.7	32	5	3.7	16.6	3.5	1,305	0.2	$ 62,634	-0.3
Salt Lake City, UT	26.9	12.1	43	15	2.1	10.8	2.4	1,281	1.4	$ 85,264	4.8
New Orleans-Metairie, LA	13.5	5.6	36	6	5.0	17.5	4.9	1,274	0.1	$ 56,192	-1.1
Camden, NJ	19.4	9.4	33	0	4.4	14.9	3.5	1,254	0.3	$ 80,338	-1.6
Hartford-East Hartford-Middletown, CT	15.0	8.1	35	-3	4.9	11.0	3.4	1,207	0.0	$ 68,326	1.4
Birmingham-Hoover, AL	16.6	6.9	36	2	2.8	12.2	3.1	1,160	0.2	$ 58,067	-0.7
Buffalo-Cheektowaga, NY	16.1	10.1	32	3	4.2	21.8	4.4	1,125	-0.1	$ 55,890	-1.5
Tucson, AZ	25.2	11.0	47	13	3.4	13.6	4.7	1,116	2.3	$ 53,632	-0.8
Grand Rapids-Kentwood, MI	18.7	8.4	33	9	3.6	20.2	2.9	1,075	0.0	$ 66,911	-0.4
Rochester, NY	16.6	8.3	29	1	3.8	16.8	4.3	1,067	-0.1	$ 57,898	-1.5
Fresno, CA	22.2	9.2	51	18	6.8	16.7	7.1	1,024	0.9	$ 57,272	0.4
Tulsa, OK	18.0	7.4	31	5	2.7	13.3	3.1	1,008	0.4	$ 50,704	-0.9
Urban Honolulu, HI	16.8	1.8	87	19	4.0	19.4	2.1	982	0.3	$ 80,546	-2.3
Worcester, MA-CT	16.6	9.4	40	2	4.8	15.6	3.2	952	0.1	$ 76,477	-2.6
Omaha-Council Bluffs, NE-IA	17.0	6.1	30	3	2.5	9.5	3.0	950	0.0	$ 70,767	1.9
Bridgeport-Stamford-Norwalk, CT	16.0	8.7	51	-14	4.8	11.4	3.4	945	0.0	$ 87,791	2.3
Tacoma-Lakewood, WA	21.3	12.8	53	20	5.7	18.3	5.1	939	1.3	$ 76,614	-3.7
Greenville-Anderson, SC	22.4	6.5	38	6	3.0	11.9	2.6	937	0.6	$ 57,617	-1.1
Albuquerque, NM	19.1	9.2	40	5	5.2	10.2	5.0	923	0.2	$ 56,695	1.6
Bakersfield, CA	22.0	9.9	50	19	7.7	18.1	8.0	923	0.9	$ 53,086	1.0
Knoxville, TN	25.7	10.1	40	8	2.8	14.2	3.4	911	0.8	$ 53,595	-1.2
McAllen-Edinburg-Mission, TX	18.6	6.7	26	0	8.4	17.2	6.5	903	1.4	$ 41,958	-1.1
North Port-Sarasota-Bradenton, FL	32.5	9.4	51	18	2.8	14.1	2.7	882	1.9	$ 64,522	-2.1
Albany-Schenectady-Troy, NY	12.5	8.6	31	-2	3.4	14.4	3.7	878	-0.1	$ 68,750	-0.8
El Paso, TX	14.8	8.3	38	6	4.9	14.1	3.4	877	1.4	$ 49,869	0.4
Lake County-Kenosha County, IL-WI	14.8	3.7	32	-6	4.2	14.8	3.3	869	0.1	$ 85,970	1.1
Oxnard-Thousand Oaks-Ventura, CA	18.5	6.3	68	17	4.6	14.8	3.7	867	0.9	$ 92,809	1.9
New Haven-Milford, CT	16.6	9.4	39	-2	5.1	11.2	3.7	856	0.0	$ 61,262	0.3
Columbia, SC	18.9	7.5	33	5	3.3	8.3	2.8	853	0.6	$ 54,930	-0.9
Allentown-Bethlehem-Easton, PA-NJ	17.4	9.6	32	-1	5.0	17.0	4.8	845	0.0	$ 71,605	-1.8
Baton Rouge, LA	11.1	3.3	33	5	3.8	12.5	4.9	835	0.1	$ 59,113	-0.1
Charleston-North Charleston, SC	24.1	7.2	41	8	3.0	11.6	2.4	816	0.6	$ 69,456	-0.4
Cape Coral-Fort Myers, FL	35.6	10.6	48	21	3.2	14.6	2.9	812	2.0	$ 60,821	-2.2
Dayton-Kettering, OH	17.0	8.3	28	1	4.0	15.6	4.4	805	-0.1	$ 54,194	1.2
Greensboro-High Point, NC	21.5	8.1	37	4	4.2	16.3	4.0	799	1.3	$ 50,997	0.4
Stockton, CA	23.7	10.4	54	15	6.5	17.6	5.9	781	0.9	$ 68,418	0.1
Boise City, ID	26.8	18.9	52	23	2.7	12.5	2.8	774	1.2	$ 70,009	-0.8
Elgin, IL	15.8	4.7	32	-2	4.7	16.5	3.7	768	0.1	$ 84,193	-0.4
Lakeland-Winter Haven, FL	26.7	10.1	43	17	4.2	18.0	3.5	764	2.0	$ 50,390	-3.0
Colorado Springs, CO	23.3	10.4	45	13	4.2	12.0	3.2	763	0.8	$ 87,806	-1.2
Little Rock-North Little Rock-Conway, AR	15.0	5.6	26	1	3.2	10.6	3.3	753	0.5	$ 50,965	-0.5
Wilmington, DE-MD-NJ	14.6	7.6	35	3	4.8	12.1	3.9	735	0.5	$ 73,955	1.8
Gary, IN	17.7	7.7	30	5	3.8	19.5	4.8	708	0.2	$ 62,436	-1.6
Akron, OH	15.1	7.1	27	-1	4.1	14.8	4.6	701	-0.1	$ 54,117	1.3
Des Moines-West Des Moines, IA	15.1	4.2	31	5	3.5	11.4	2.5	658	-0.2	$ 76,305	3.5

Sources: *FHFA/BLS/U.S. Census Bureau/Freddie Mac/NAR/Moody's Analytics/Arch MI*

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