

Zillow Economic Research



Dr. Svenja Gudell, Chief Economist @SvenjaGudell

Svenja joined Zillow in 2011 and leads the company's industry-leading economic research team, a recognized voice of impartial, data-driven economic analysis on the U.S. housing market. Under Svenja's leadership, Zillow produces monthly reports on housing trends for more than 450 metros nationwide, with data often available down to the ZIP-code level. In addition, Svenja and her team publish original research on various real estate topics, ranging from rental and mortgage affordability, negative equity and forecasting, to policy, generational and mortgage research. Svenja has presented to various federal agencies and at numerous industry conferences, and has been widely quoted in national and local media.

Prior to joining Zillow, Svenja did economic, financial and strategy consulting for Analysis Group and was an Assistant Economist in the Research Group of the Federal Reserve Bank of New York. Svenja has a Bachelor of Arts in economics from the University of Rochester, a Master of Arts in economics from New York University, a Master of Science in business administration from the University of Rochester, and a Ph.D. in finance from the University of Rochester.

Zillow Economic Research



Dr. Skylar Olsen, Director of Economic Research

Skylar joined Zillow in the summer of 2012. Her research is used by consumers, policy makers, and other researchers to understand the real estate markets and make better decisions. While authoring numerous research projects such as A House Divided – How Race Colors the Path to Homeownership, she also creates many of Zillow's real estate metrics, including the Buyer-Seller Index and the Buy-Rent Breakeven Horizon. She holds a Ph.D. in Economics from the University of Washington and specializes in the spatial patterns of housing and demographic change.



Sarah Mikhitarian, Senior Economist

Sarah joined Zillow in October 2015, working on unveiling current real estate market conditions, interesting patterns in the housing market and past and future market trends. Prior to joining Zillow, Sarah worked at the Institute for Health Metrics and Evaluation, where she conducted research aimed at understanding and improving national and global health and evaluating the performance of health systems. She received her undergraduate degree in both economics and Hispanic studies from Scripps College, and was awarded a Master of Arts in economics with a specialization in applied microeconometrics from the University of Washington.

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Jeff Tucker, Economist

Jeff joined Zillow in March 2018 as an analyst on the Economic Research team, while completing his Ph.D. in Economics at the University of Washington. He studies the causes and consequences of changing supply in the housing market. Prior to joining Zillow, he analyzed competition in markets from television to soda bottling as an economic consultant in merger review and antitrust litigation. He holds an M.A. in Economics from the University of Washington and a B.A. in Economics from Amherst College.



Alexander Casey, Policy Advisor

Alexander joined Zillow as a policy analyst in the summer of 2016. He works on the Economic Research team, using Zillow's research to contribute to current public policy concerning housing and the overall economy. Alexander is involved with a variety of policy issues including housing assistance, land use, finance and transportation. Prior to joining Zillow, Alexander worked at the Minnesota Attorney General's Office on consumer protection issues. Alexander holds an M.P.A. from the Evans School of Public Policy and Governance at the University of Washington, and a B.A. in Sociology from the University of Minnesota.

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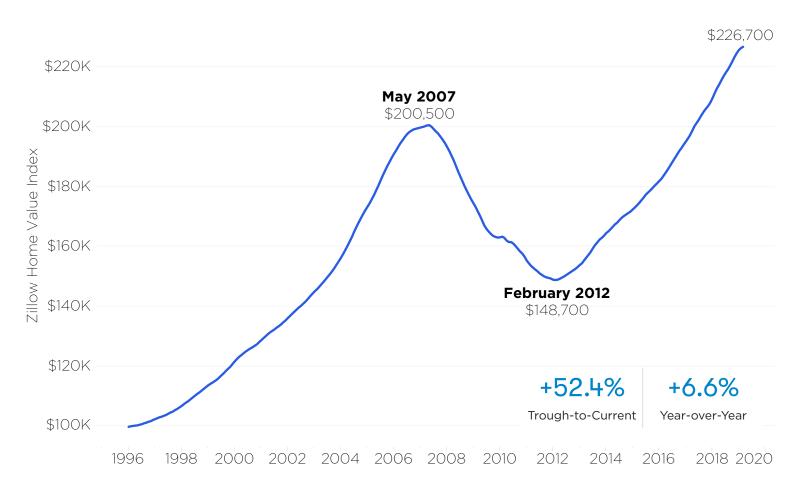
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HOME VALUES AND RENTS

- U.S. home values are growing at a steady pace, and have surpassed prerecession highs nationally and in a number of large markets. Driven largely by limited inventory and high demand, home values are growing fastest at the bottom end of the market.
- Regionally, markets in the Midwest and Southeast are outperforming markets along the east and west coasts
- Growth in U.S. rents has slowed considerably over the past couple of years and has largely stabilized. Markets in the Southwest are leading national rent growth.

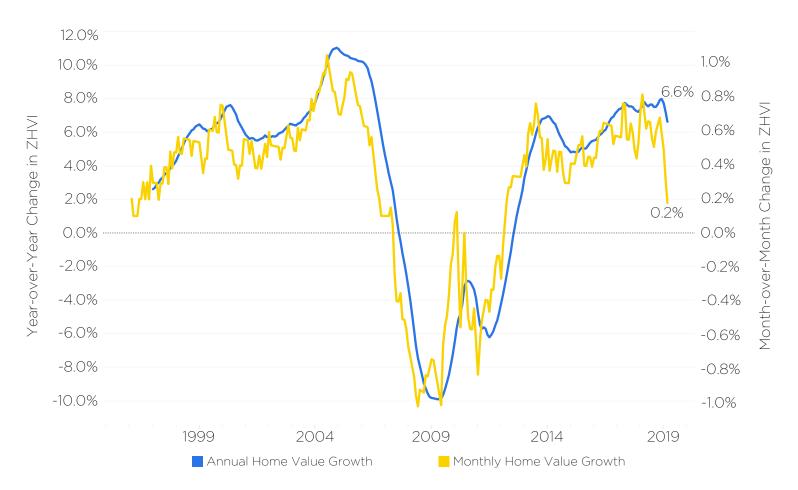
Zillow Home Value Index

U.S. home values have surpassed pre-recession highs.



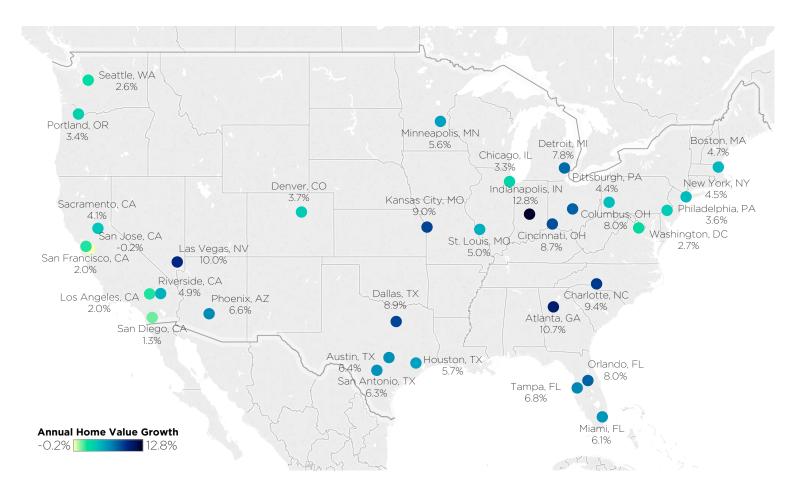
Zillow Home Value Index, Annual and Monthly Growth

The pace of annual U.S. home value growth has accelerated over the past few years.



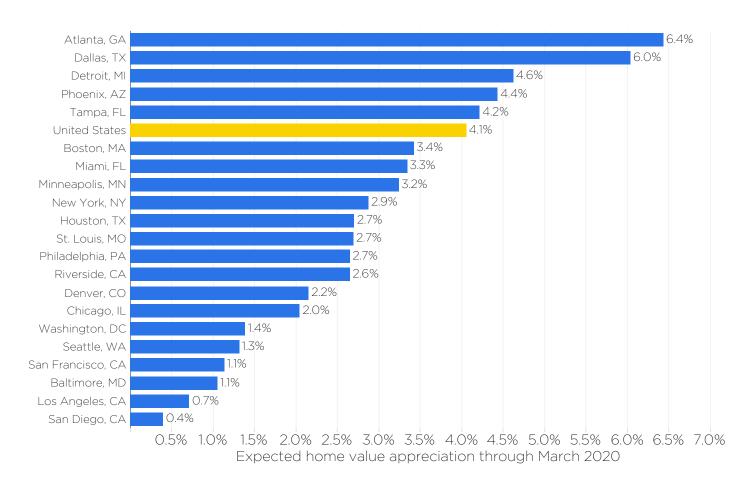
Annual Home Growth Appreciation

Strong home value growth has shifted from the coasts to the Midwest and South.



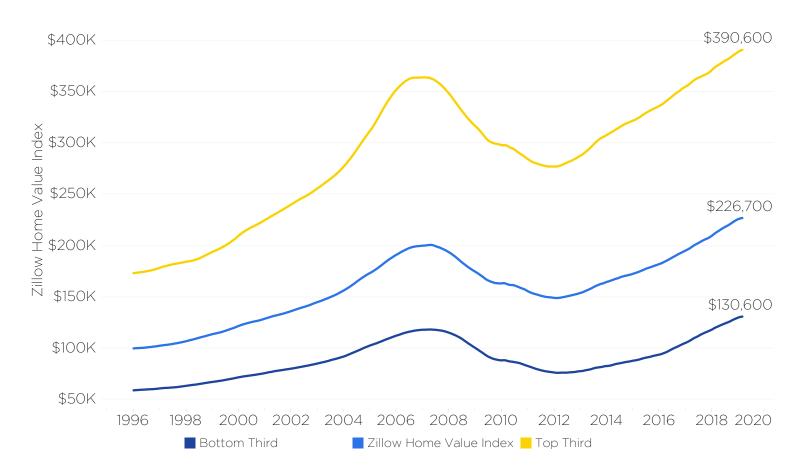
Zillow Home Value Forecast

Home value growth is expected to slow over the next 12 months.



Zillow Home Value Index, by Thirds

Homes valued in the bottom-third of the market are growing in value the fastest.



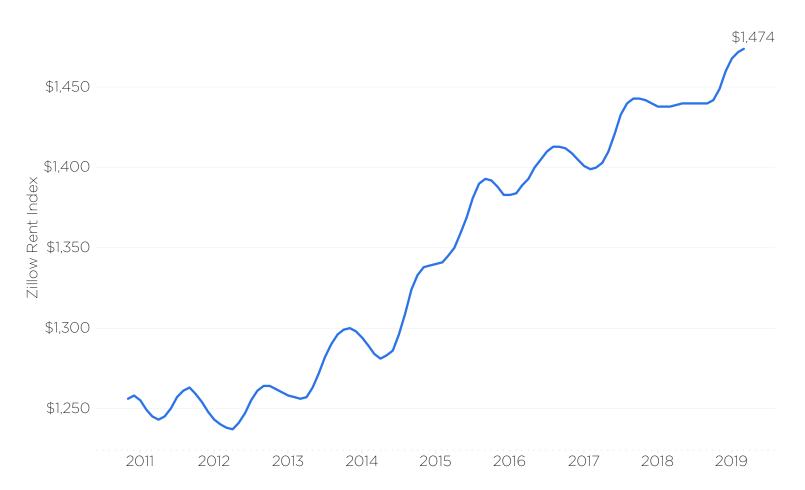
Annual Home Value Appreciation, by Thirds

Home value appreciation among homes valued in the bottom third has slowed somewhat, but the annual pace of growth is still more than double that of top-third homes.

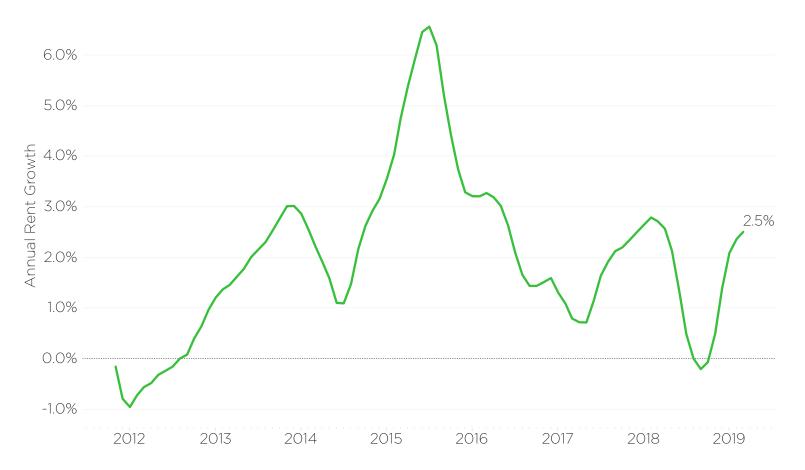


Zillow Rent Index

Annual growth in rents slowed from the beginning of 2018 but has resumed pace.

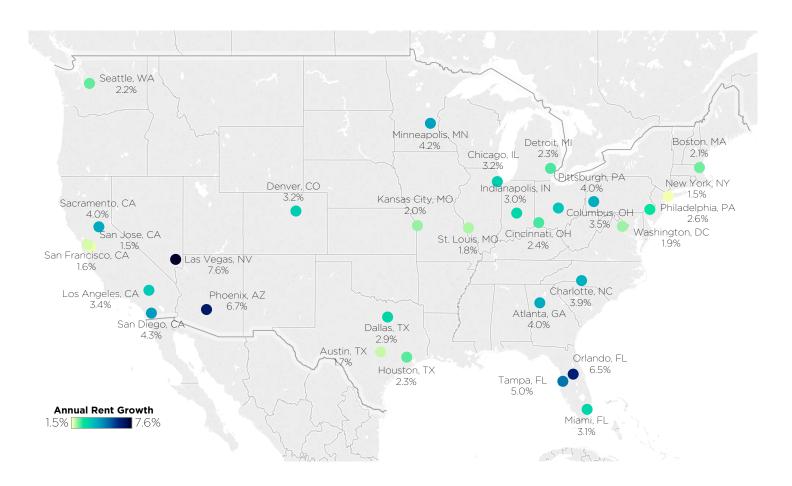


Zillow Rent Index, Annual Growth



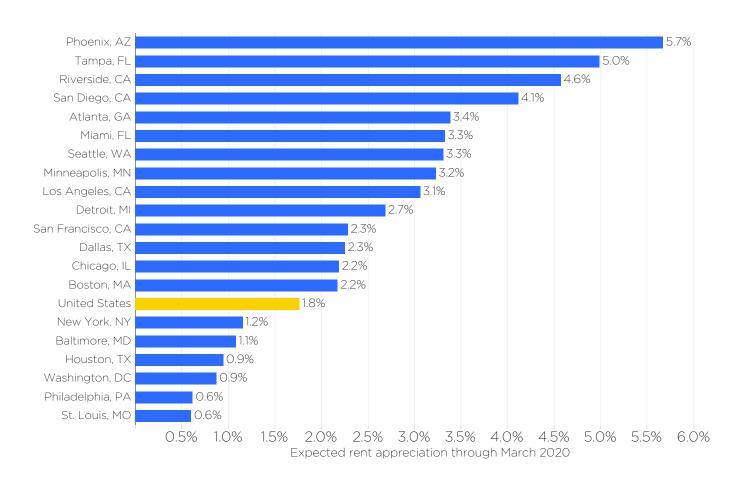
Annual Rent Appreciation

The annual pace of rent growth is largely sustainable in most large markets.



Zillow Rent Forecast

Rental appreciation varies regionally.

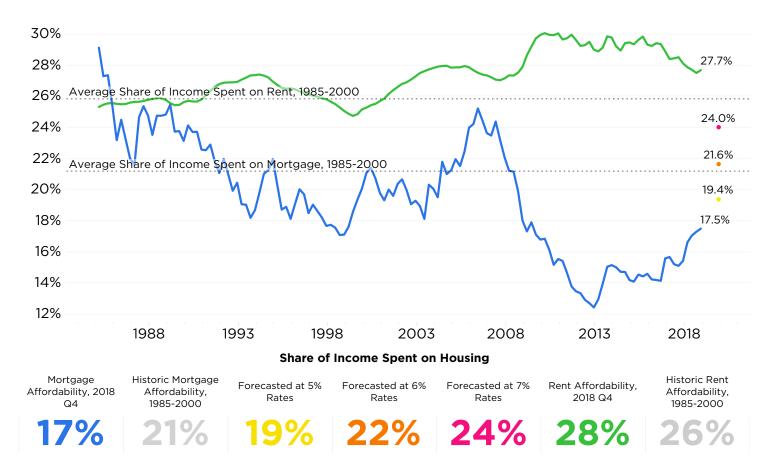


HOUSING AFFORDABILITY

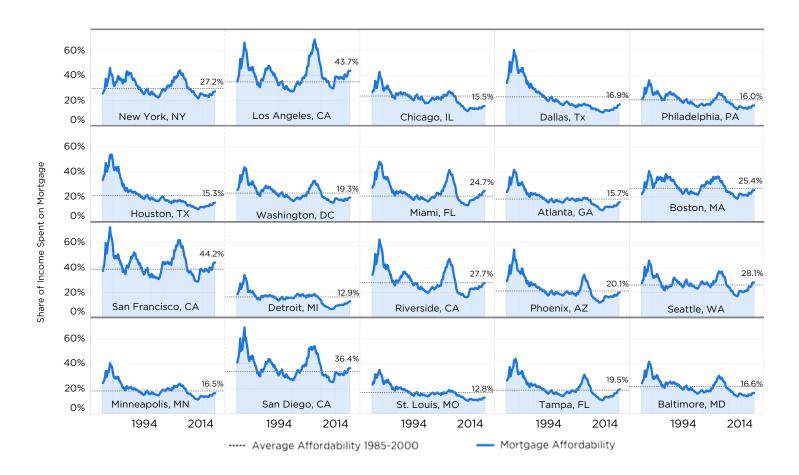
- Overall, mortgage affordability the share of income necessary to afford a typical mortgage payment – looks reasonable in most markets. Home affordability is improving in half of all metros.
- Unlike mortgage affordability, rental affordability is worse today than it was historically, though the recent slowdown in rent growth has helped somewhat.
- Poor rent affordability is worrisome, as more money devoted to rent makes it more difficult to save for homeownership.

Zillow Mortgage and Rent Affordability

Nationwide, the share of income spent on a mortgage is well below historic norms.



Mortgage Affordability by Metro

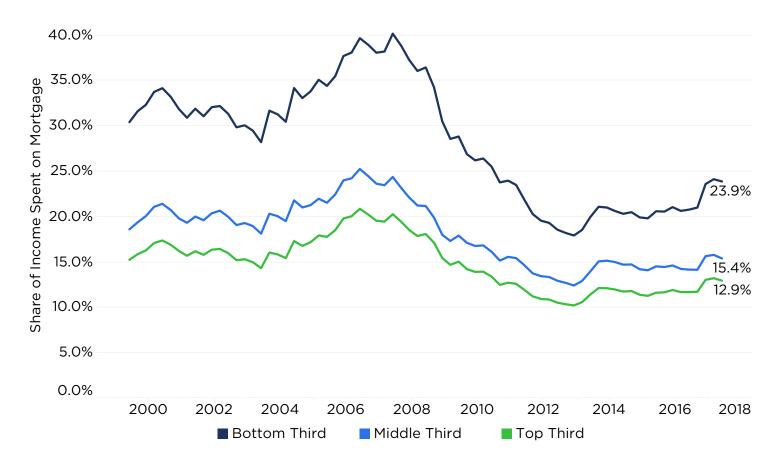


Rent Affordability by Metro



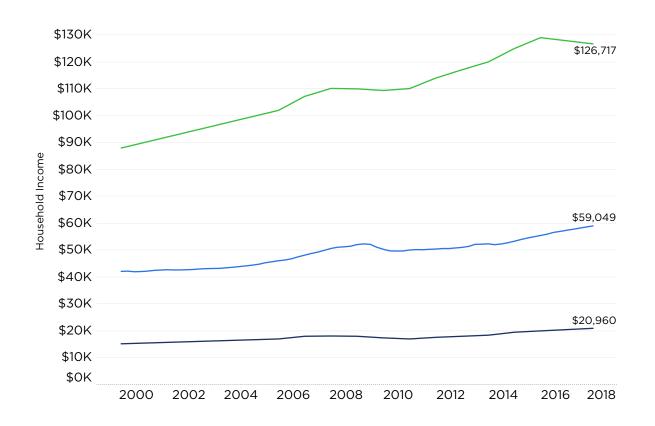
Zillow Mortgage Affordability, by Thirds

Weak income growth and rapid appreciation, even with very low mortgage interest rates, means homes are becoming more unaffordable, more quickly for buyers of homes valued in the bottom third.



Household Income, by Thirds

Income growth for the lowest earners has been especially weak.



Nominal Income Growth, 2000-2016

Top Third

50.5%

Middle Third

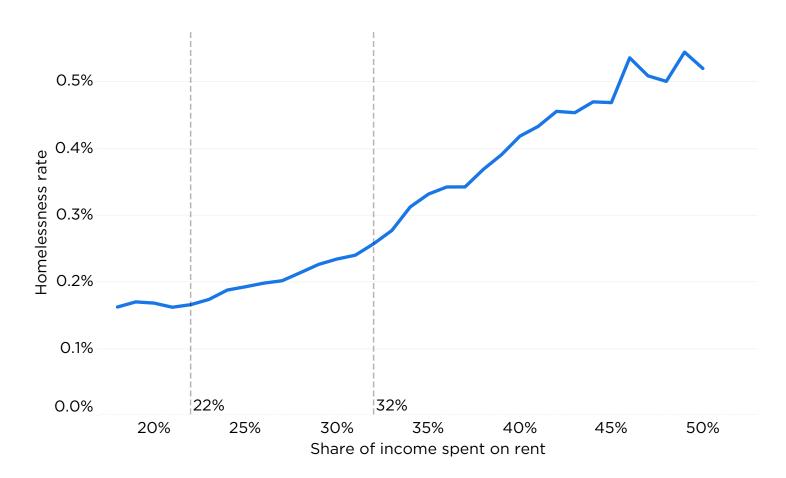
35.2%

Bottom Third

30.5%

Homelessness

Homelessness climbs when rent affordability reaches 22% and 32% thresholds



Housing Affordability Table

Region Name	Median Income	Mortgage Affordability, 2018 Q4	Historic Mortgage Affordability, 1985-2000	Forecast Mortgage Affordability (5% Interest Rate)	Forecast Mortgage Affordability (6% Interest Rate)	Forecast Mortgage Affordability (7% Interest Rate)	Rent Affordability, 2018 Q4	Historic Rent Affordability 1985-2000
United States	\$63,301	17.5%	21.2%	19.4%	21.6%	24.0%	27.7%	25.8%
New York, NY	\$79,370	27.2%	29.1%	30.0%	33.5%	37.2%	36.4%	26.4%
Los Angeles,CA	\$73,574	43.7%	34.7%	46.9%	52.4%	58.1%	45.7%	36.3%
Chicago, IL	\$71,481	15.5%	23.1%	17.1%	19.1%	21.2%	28.1%	25.3%
Dallas, TX	\$70,361	16.9%	22.8%	19.1%	21.3%	23.6%	27.7%	21.7%
Philadelphia, PA	\$71,577	16.0%	20.4%	17.8%	19.9%	22.1%	26.7%	21.4%
Houston, TX	\$66,064	15.3%	20.9%	16.6%	18.5%	20.6%	28.6%	24.3%
Washington, DC	\$103,622	19.3%	22.6%	20.8%	23.2%	25.7%	25.0%	17.8%
Miami, FL	\$56,511	24.7%	20.3%	27.1%	30.3%	33.6%	40.2%	28.5%
Atlanta, GA	\$67,998	15.7%	18.2%	17.7%	19.7%	21.9%	25.2%	19.2%
Boston, MA	\$90,087	25.4%	26.4%	28.9%	32.3%	35.9%	31.8%	26.4%
San Francisco, CA	\$107,619	44.2%	38.6%	49.0%	54.8%	60.8%	38.3%	30.7%
Detroit, MI	\$60,995	12.9%	16.0%	14.5%	16.2%	18.0%	24.0%	20.0%
Riverside, CA	\$65,311	27.7%	27.9%	30.1%	33.6%	37.3%	35.8%	32.7%
Phoenix, AZ	\$64,657	20.1%	21.0%	21.7%	24.2%	26.9%	26.2%	22.7%
Seattle, WA	\$86,079	28.1%	25.9%	30.6%	34.1%	37.9%	30.9%	23.8%
Minneapolis, MN	\$79,946	16.5%	17.8%	18.0%	20.1%	22.3%	25.2%	21.3%
San Diego, CA	\$80,565	36.4%	33.6%	39.5%	44.1%	48.9%	38.8%	34.6%
St. Louis, MO	\$64,263	12.8%	16.9%	14.0%	15.6%	17.3%	21.5%	21.2%
Tampa, FL	\$54,076	19.5%	18.8%	21.6%	24.1%	26.8%	31.4%	27.7%
Baltimore, MD	\$79,694	16.6%	21.8%	18.0%	20.1%	22.3%	26.3%	26.9%

INVENTORY, CONSTRUCTION AND DEMOGRAPHICS

- Inventory of homes for sale is very low, and getting lower. Inventory constraints are particularly acute among entry-level and median homes the exact homes sought by first-time homebuyers and young families.
- New construction has thus far failed to get back to pre-recession levels, especially for single-family homes.
- Homes that are on the market are selling faster currently, homes spend tendays less on the market before selling than they did a year ago.
- Millennials do value homeownership, but many are finding it difficult to attain, and more young adults are living with their parents.

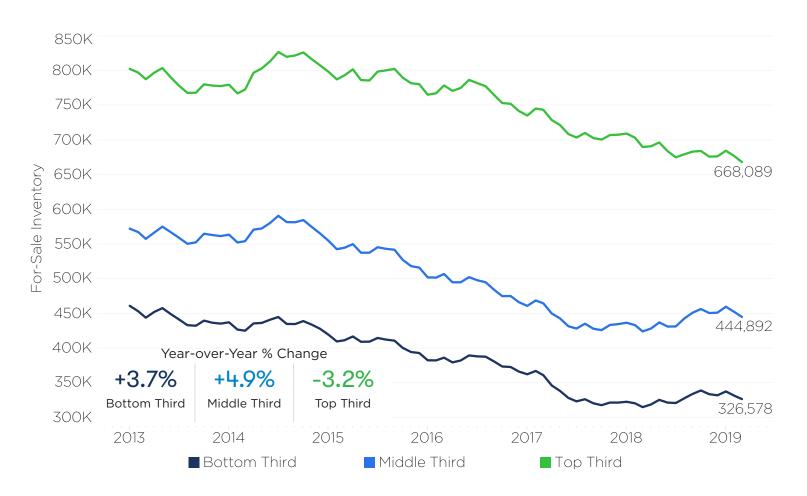
Zillow For-Sale Inventory

The number of U.S. homes for sale is low but stabilizing.



Zillow For-Sale Inventory, by Thirds

Inventory shortages are particularly acute among bottom- and middle-third homes.



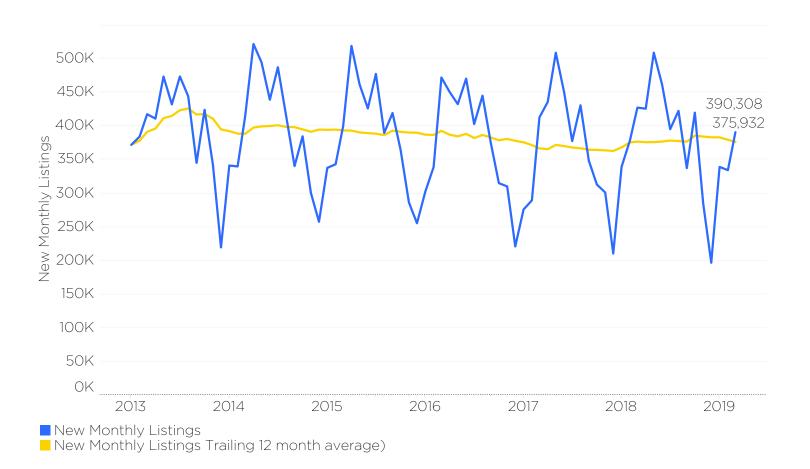
Annual Change in Zillow For-Sale Inventory, by Thirds

But bottom- and middle-third saw an uptick in the last half of 2018



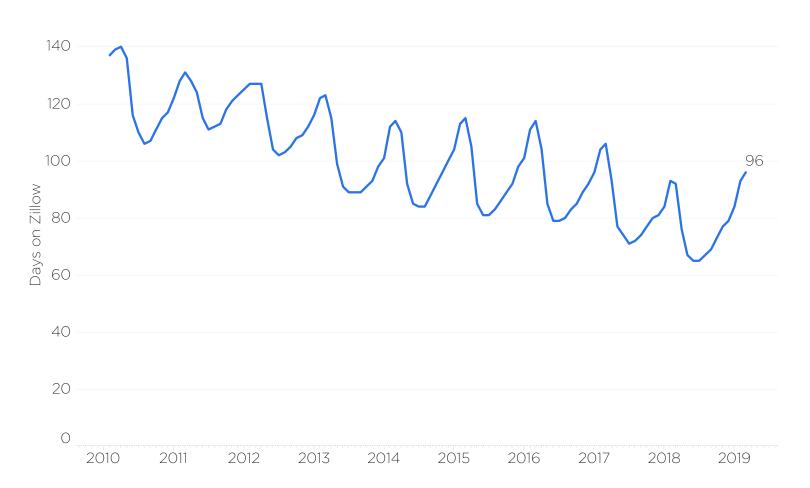
New Homes Listed For Sale

The number of listings hitting the market has remained consistent



Days on Zillow

Homes listed for sale are selling more quickly than in the past few years.



About Zillow

Zillow is the leading real estate and rental marketplace dedicated to empowering consumers with data, inspiration and knowledge around the place they call home, and connecting them with great real estate professionals. In addition, Zillow operates an industry-leading economics and analytics bureau led by Zillow Group's Chief Economist Dr. Svenja Gudell. Dr. Gudell and her team of economists, data analysts, applied scientists and engineers produce extensive housing data and research covering more than 450 markets at Zillow Real Estate Research. Zillow also sponsors the quarterly Zillow Home Price Expectations Survey, which asks more than 100 leading economists, real estate experts and investment and market strategists to predict the path of the Zillow Home Value Index over the next five years. Launched in 2006, Zillow is owned and operated by Zillow Group, Inc. (NASDAQ:Z and ZG), and headquartered in Seattle.

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