Housing's best year in a decade

Housing and mortgage market update

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Introduction

A COMBINATION OF LOW MORTGAGE RATES AND ROBUST JOB GROWTH should help to propel housing markets in 2016. Despite weak overall economic growth, the prospects for housing remain bright. Many are forecasting that home sales will reach their highest level in a decade[1].

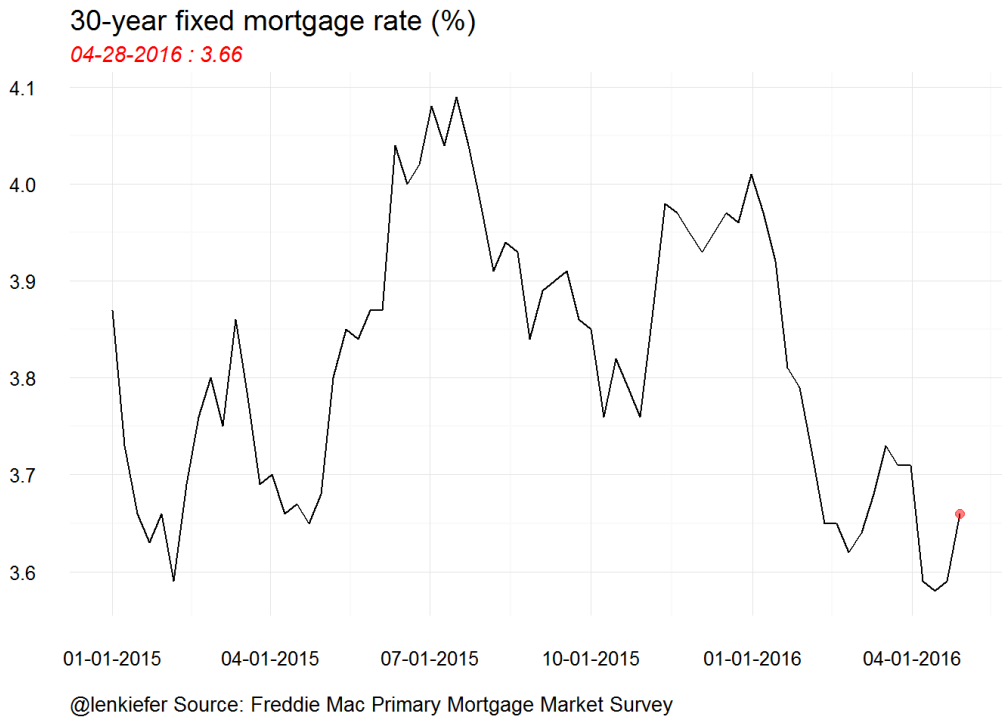
These notes are summary of the key points I made in several recent economic outlook presentations, covering trends in the economy, housing, and mortgage markets.

[1] see for example: http://www.freddiemac.com/finance/report/20160422_economic_outlook_darkens_but_housing_remains_bright_spot.html

Low mortgage rates

MORTGAGE RATES BEGAN THE YEAR at slightly

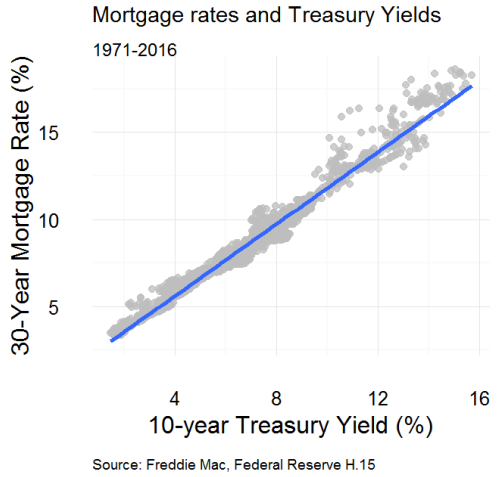
above 4 percent, but have trended down throughout the year[2]. Mortgage rates have followed long-term U.S. Treasury yields down[3].



Low mortgage rates help to support homebuyer affordability. For example, for a buyer looking to finance a home purchase with a $200,000 loan, a 1/4 percentage point increase in interest rate increases annual Principal and Interest mortgage payments by $341. If a household can only just qualify for a $200,000 mortgage at a 30-year rate of 3.66 percent, then with rates at 3.91 (+0.25 percentage points) the maximum loan amount this

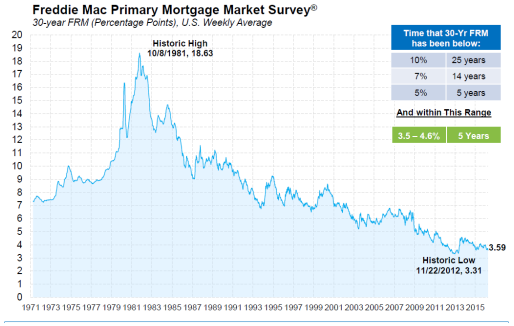
[2] Mortgage rates reported weekly in Freddie Mac's Primary Mortgage Market Survey.

[3] The historical correlation between Treasury yield and mortgage rates is very high



Mortgage rates and 10-year Treasury yields

Additional context for mortgage rates. The chart below shows mortgage rates from 1971 through 2016.



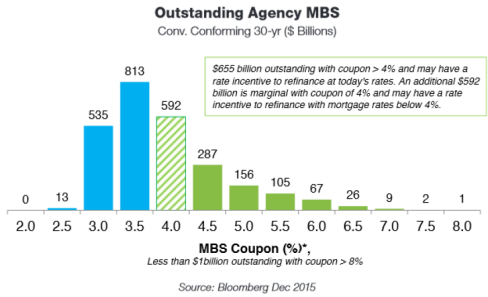
borrower could qualify for would be $194,000. From a constrained borrower's point of view, a quarter point in rate is like a 3 percent increase in house prices.

Mortgage refinance: mostly dead, but not all dead

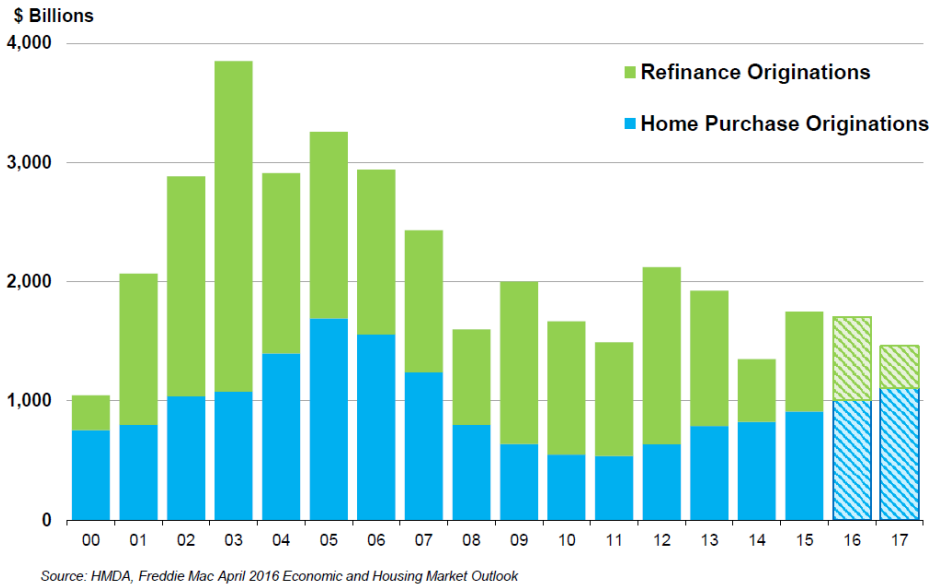
Low mortgage rates help to support refinance activity in 2016. Many analysts had expected mortgage rates to rise to start 2016 and spend most of the year well above 4 percent for the 30-year fixed rate mortgage. Instead, mortgage rates tumbled to start the year and breathed additional live into mortgage refinancing activity.

Freddie Mac has been forecasting that refinance mortgage activity would decline as interest rates rose. But low mortgage rates through the first four months of 2016 have allowed additional refinance activity. The charts below show the history and forecast for single-family mortgage originations from Freddie Mac's April 2016 Outlook.

Outstanding Agency Mortgage Backed Securities (30-year FRM)

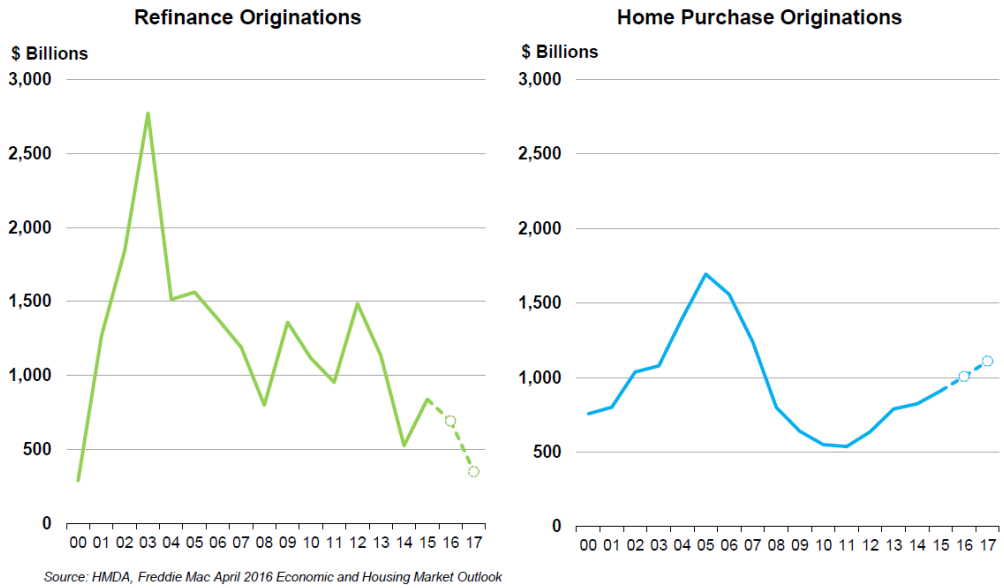


As of December 2015, there remained a significant volume of outstanding single-family mortgage debt that could possibly benefit by refinancing into a lower mortgage rate. Just in the conventional conforming (excluding FHA/VA and Jumbo loans) space there was $655 billion oustanding with a contract rate above market interest rates. And an additional $592 billion might find a refinance attractive with mortgage rates below 4 percentage points for the 30-year fixed rate mortgage.



Source: HMDA, Freddie Mac April 2016 Economic and Housing Market Outlook

The charts show a shift from refinance to purchase mortgage activity as higher rates gradually reduce refinance activity while home sales and house price appreciation help drive purchase activity higher.



Source: HMDA, Freddie Mac April 2016 Economic and Housing Market Outlook

The purchase market strengthens

Mortgage origination activity is projected to remain relatively strong due to the strong projected growth in home purchase mortgage activity. This relies on two things[4] : 1) continued improvement in home sales, and 2) continued positive house price growth.

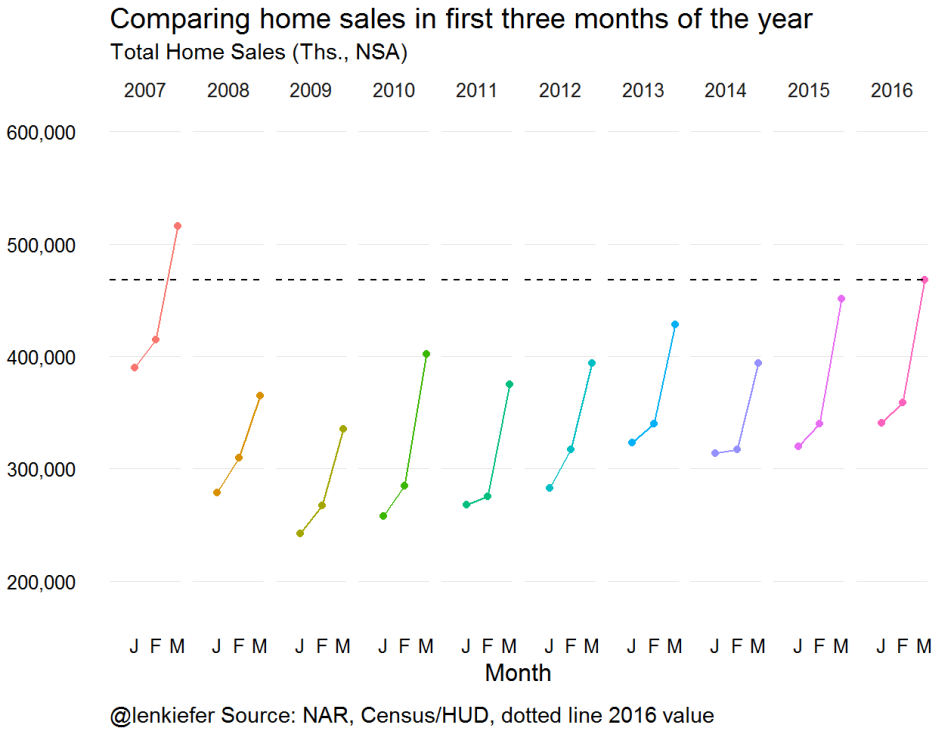
Recent trends in home sales

Home sales have gotten off to a solid start for the year. Housing markets are highly seasonal, so the first three months of the year are typically some of the lowest months. Winter weather slows construction activity and

[4] Another important factor is what happens with the cash share of transactions. See for example, recent research from CoreLogic. Cash shares have trended down in recent years and that underlies most forecasts of mortgage activity. Were cash shares of home sales to rise, then purchase mortgage activity would either increase at a slower pace or even decline given the same number of home sales and the same

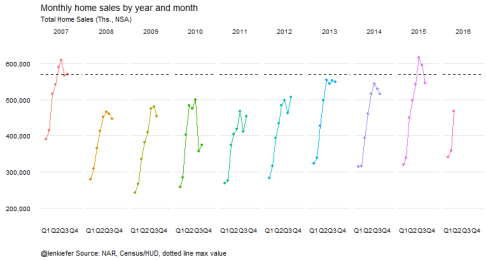
many prospective buyers do not actively shop for homes in January and Febraury when weather is often snowy in much of the country. As we enter the spring, home sales typically accelerate.

Nevertheless, the first three months of 2016 showed robust activity. Monthly housing data is often noisy, but total home sales recorded in the first three months were the highest since 2007. The graphic below compares non-seasonally adjusted home sales for the first three months of each of the past 10 years.



level of house prices.

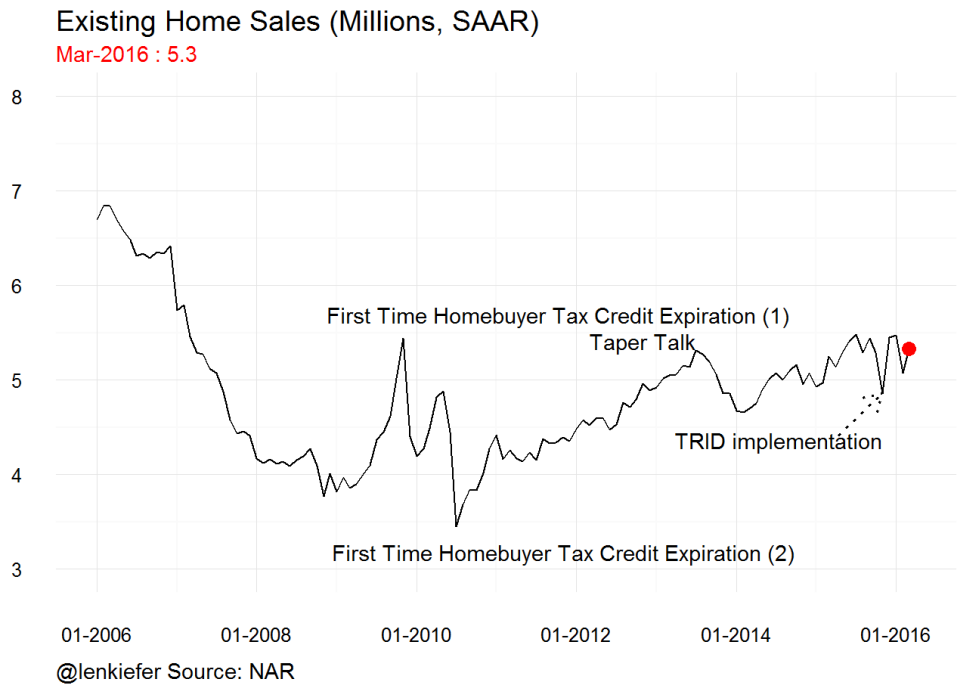
Animated gif of monthly non-seasonally adjusted home sales 2007-2016.



The pace of sales through March of 2016 is the second fastest first quarter since 2006, with 2016 edging out 2015, but falling beind 2007. In 2007, home sales in the summer months failed to match their typical seasonal pattern as the housing market cooled.

Existing home sales gather strength

Despite tight inventories, existing home sales have been trending higher in recent months. The graphic below contains the history of existing home sales, as reported by the National Association of Realtors since 2006. The annotations indicate important events[5] that drove short term trends in the existing sales market.

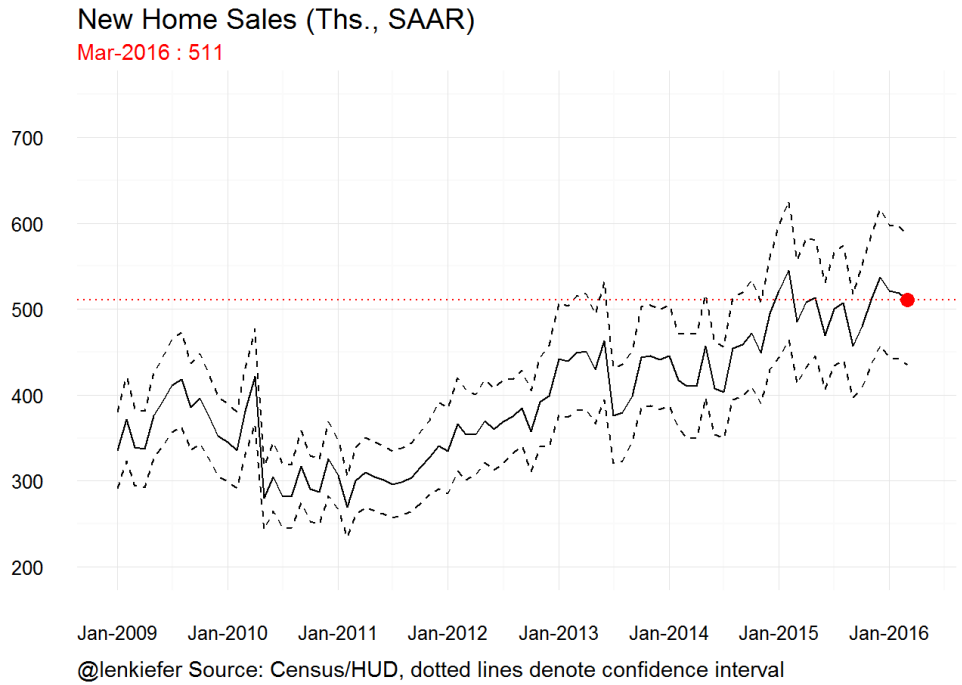


[5] Early in the recovery there were two first-time homebuyer tax credit expirations that caused home sales to spike and drop. In 2013, the "Taper Talk" event drove mortgage rates up over a full percentage point during the spring of 2013, significantly slowing housing market activity. And in November of 2015 the implementation of TRID caused some delays in closing home sales.

New home sales treading water

On the new home sales front, momentum has been slow

to build. The recent history of new home sales as reported by the U.S. Census Bureau in their joint release with the Department of Housing and Urban Development (HUD) is plotted in the graph below.

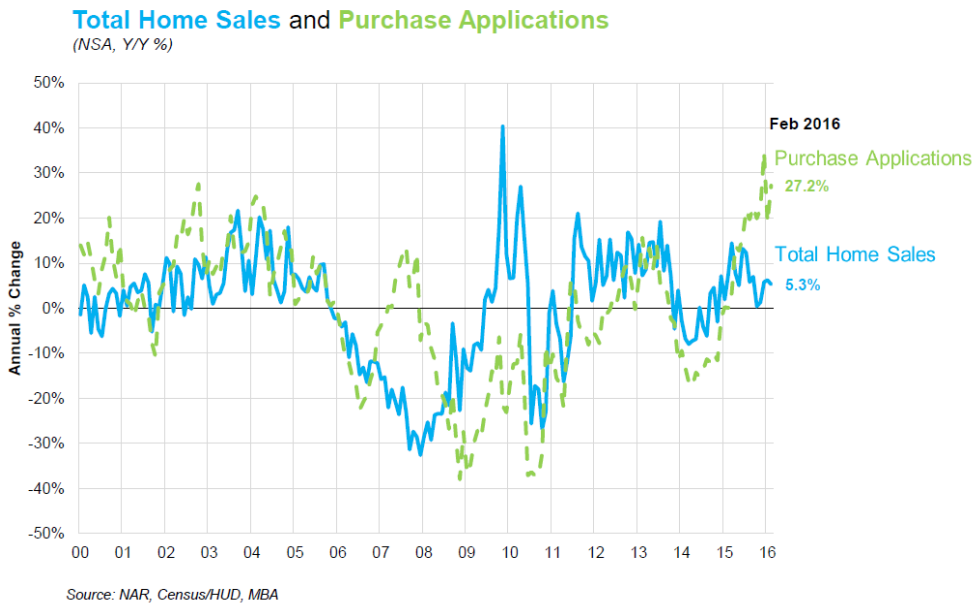


It's important the recognize that new home sales estimates are based on a relatively small sample and subject to considerable sampling uncertainty. The graph above includes the confidence interval reported by Census/HUD. Over the past year there's been no statistically significant variation in the number of new home sales. New home sales are up significantly from

the lows of a few years ago and housing construciton data suggest they'll head higher over the next year.

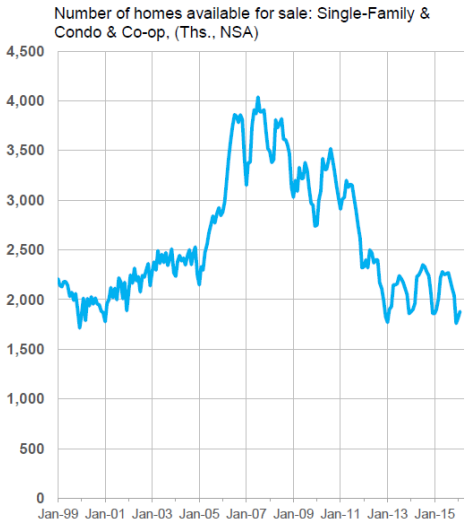
Demand still strong

Mortgage applications have been trending significantly higher over the past few months. The chart below compares the year-over-year percentage change in total home sales and mortgage purchase applications. Purchase applications have been increaing at nearly a 30 percent year-over-year pace, a sign of strong housing demand. But will there been sufficient supply?

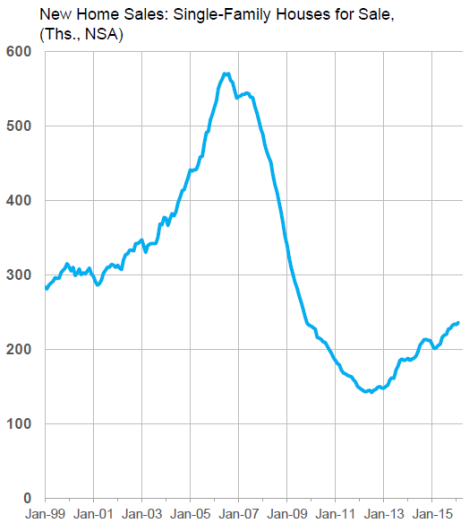


Inventory tightness

A key constraint on home sales activity has been low levels of for-sale inventory.



Source: National Association of Realtors



Source: U.S. Census Bureau/HUD

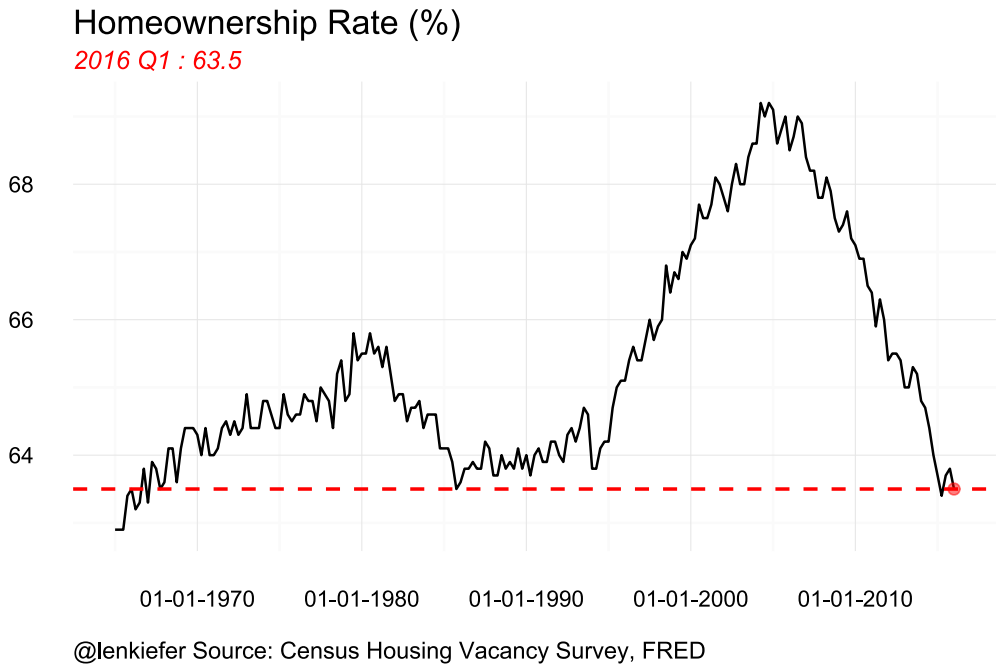
As the chart above shows, existing homes for sale have been flat over the past three years (with typical seasonal ups and downs) while new homes for sale have been trending higher, but from a low base. With low mortgage rates and a labor market posting solid jobs gains month after month, housing demand is likely to remain strong throughout the spring and summer.

Vacant Housing: from surplus to shortage

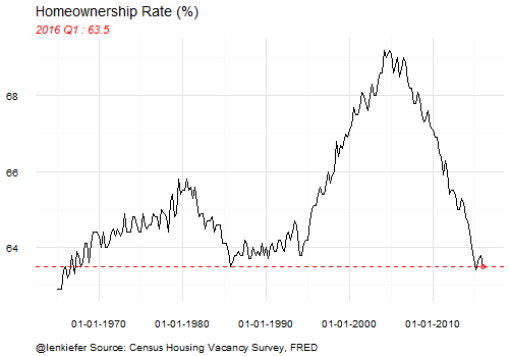
EARLIER THIS WEEK the Census Bureau

released the latest Housing Vacancy Survey (HVS) data for the first quarter of 2016.

Much attention went to the homeownership rate estimates, which showed a decline in homeownership rates near a 48-year low.

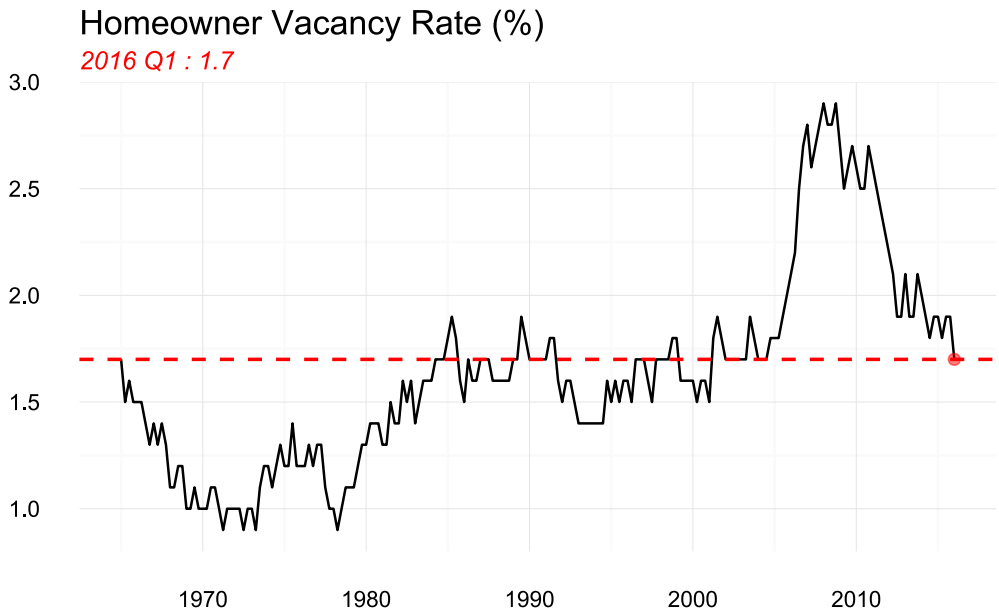


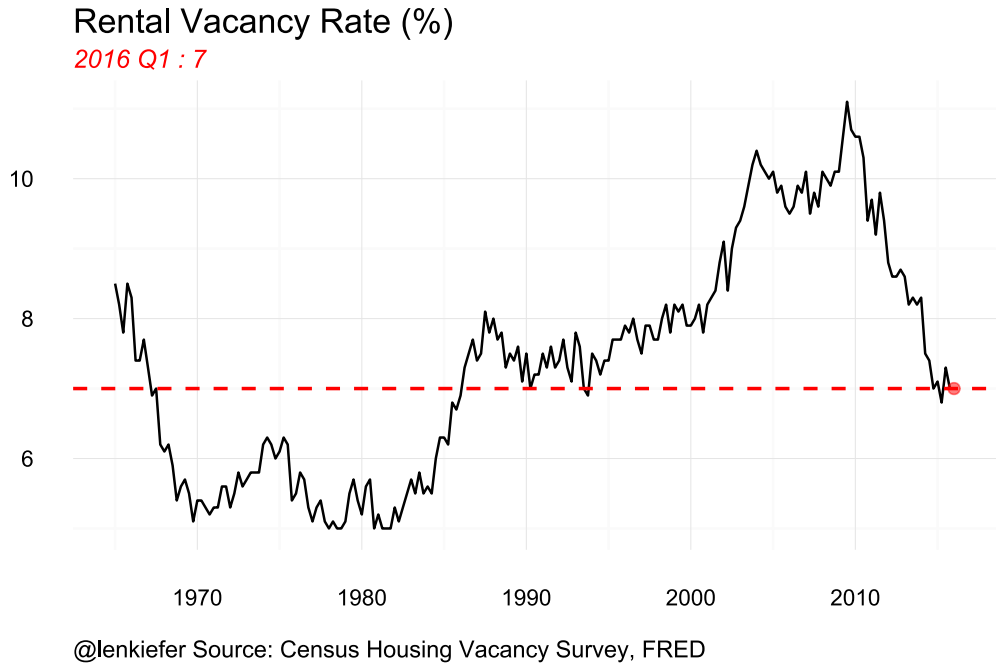
The gif below shows the history of the homeownership rate as estimated by the HVS.



Vacancy rates

In addition to the homeownership rate, the HVS data contained estimates of both the homeowner and rental vacancy rates. The graphs below show the history of each.

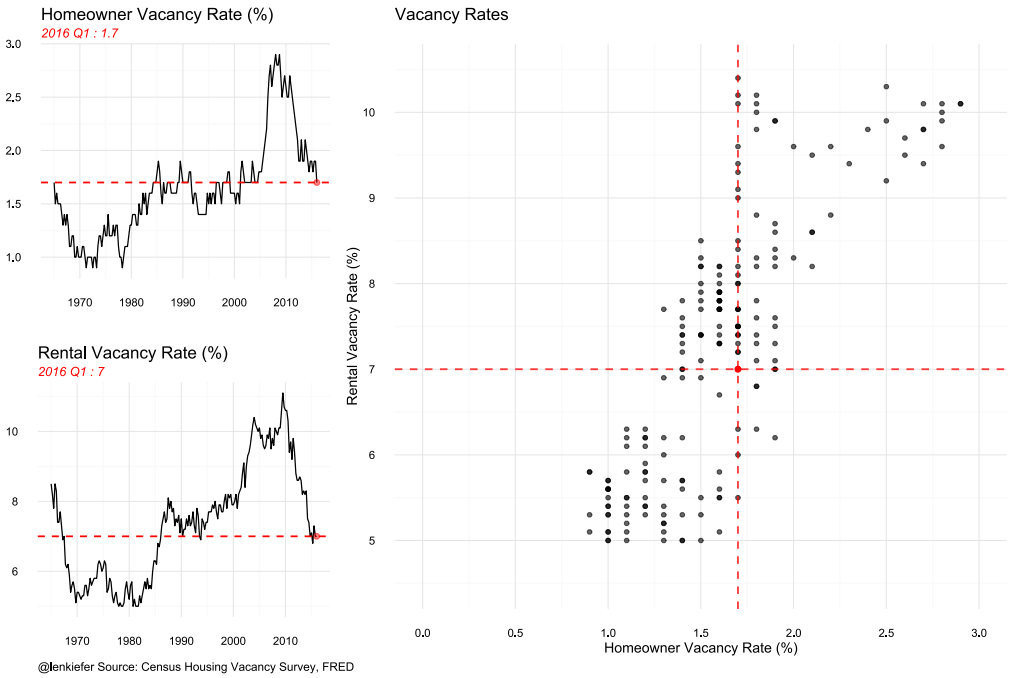




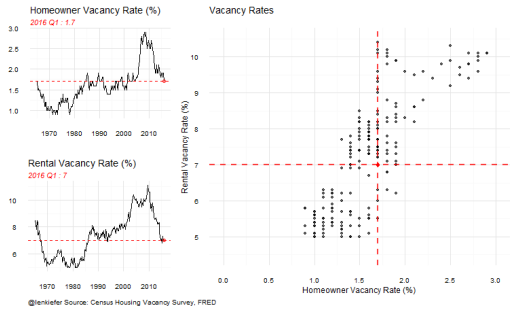
And this graphic shows the correlation of the two series

The animated gif below shows the

with a scatterplot:



joint evolution of the two series, along with a scatterplot showing the correlation between the two series.

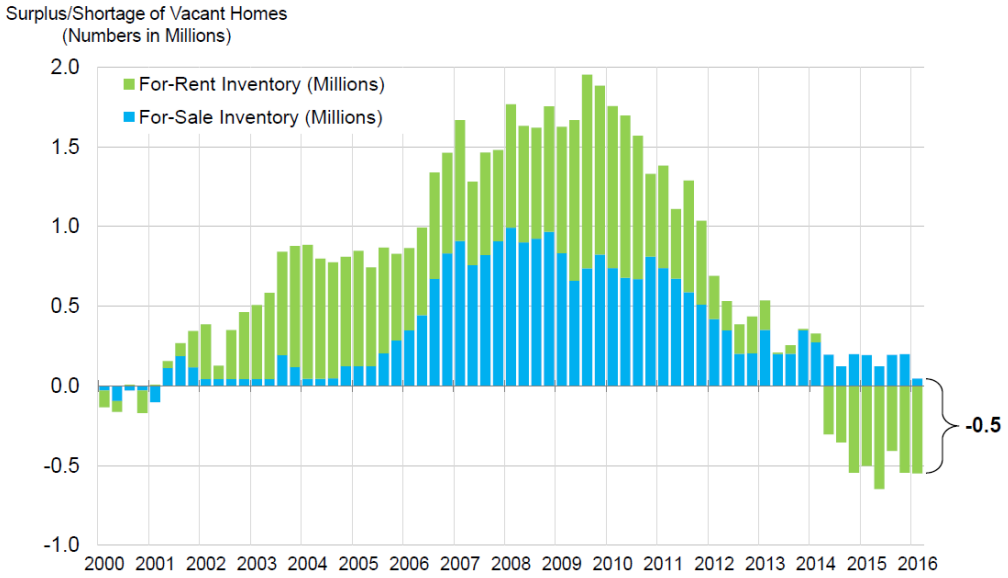


What we can see from these data is the incredible rise and fall of vacancy rates during the housing bust and subsequent recovery. Compared to history, rental vacancy rates are bit below their historical average, while homeowner vacancy rates are bit above their historic average.

Surplus to shortage

One way to look at these data is to consider in absolute numbers how many excess vacant housing units we

might have at any point in time. If we concede that a certain level of vacant housing stock is "normal", then we can compare that to the current vacant housing stock. That is in fact, what we do the following figure:



Source: Freddie Mac calculations using U.S. Census Bureau data. Negative values reflect shortage or undersupply relative to the historical benchmark. The over/undersupply of vacant housing was estimated based on the average vacancy rate from 1994Q1 to 2003Q4. Data as of March 31, 2016.

This graph was constructed by first taking the average vacancy rate for for-sale and for-rent housing from 1994Q1-2003Q4 and then comparing the current vacancy rate to those levels. If the current vacancy rate is above (below) the historic average then we consider the vacant housing supply to be in surplus (shortage).

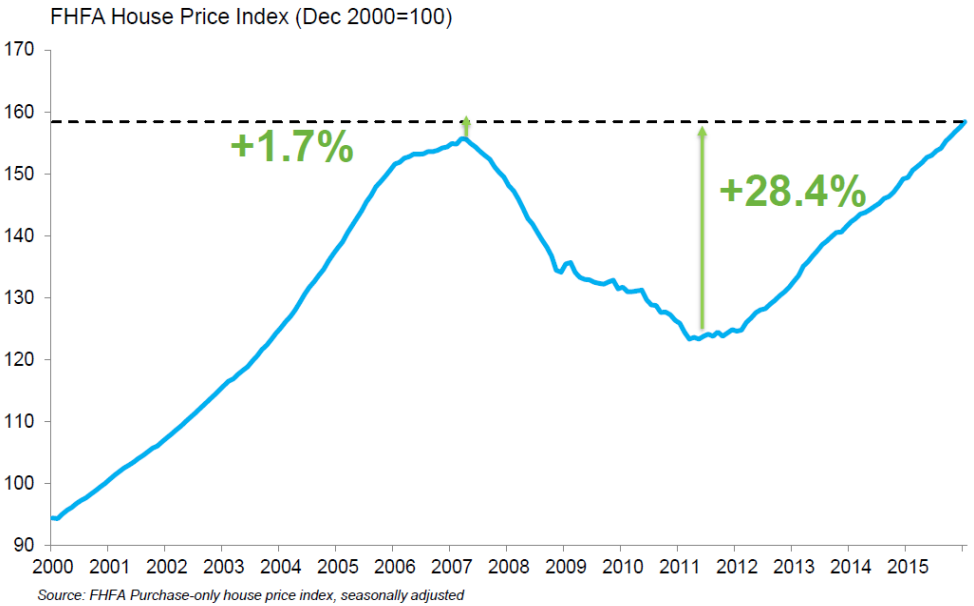
As of the first quarter 2016, the vacant housing supply is

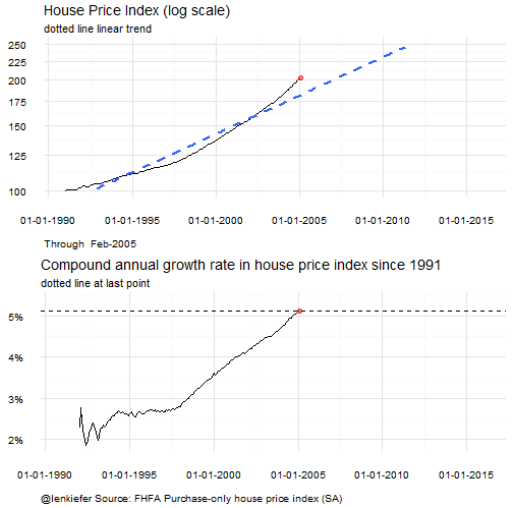
in shortage by this method by about 500,000 units. That is, there are about 500,000 fewer vacant housing units relative to what history tells us is normal. Note that the green bar (capturing rentals) is negative while the blue bar (capturing owned units) is positive. This means that in aggregate, the total vacant housing stock is 500,000 below "normal", with rentals more than 500,000 short, while for-sale properties are about 50,000 above normal.

Home price growth

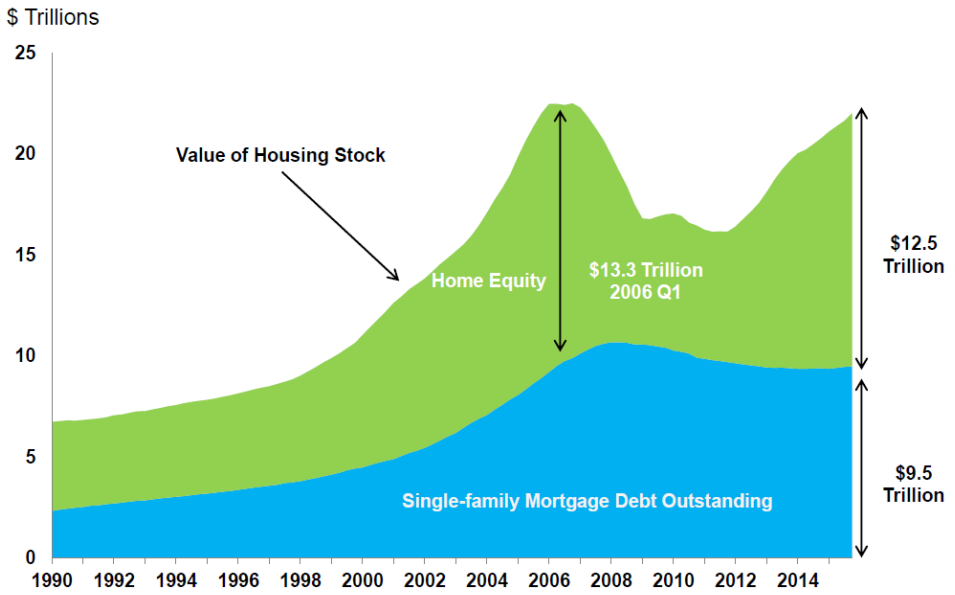
With available inventory low, demand picking up, and mortgage rates supporting affordability, home values have been increasing lately. The graph below shows the FHFA purchase-only house price index (SA) from 2000 through the latest release for February 2016.

This compositie graph shows both the level and compound rate of growth for the index:





Over that time period house prices are at a new nominal peak, surpassing their pre-recession peak by 1.7 percent. House prices are also up more than 28 percent from the low point in 2011.

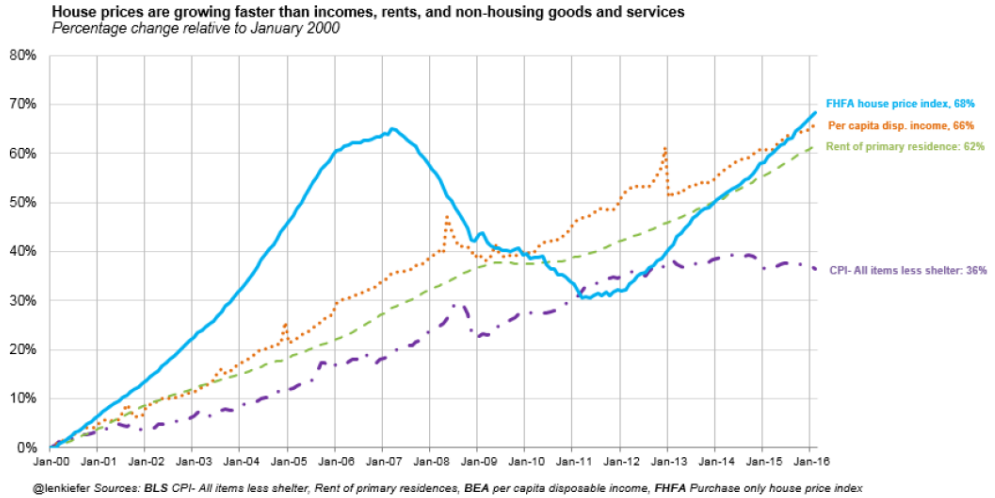


Note: Value of U.S. housing stock includes homes with and without underlying mortgages. U.S. home equity is the difference between the value of the U.S. housing stock and the amount of U.S. single-family mortgage debt outstanding.

Source: Federal Reserve Board's Flow of Funds Accounts, Table B. 101. Data as of December 31, 2015.

The rebound in house prices is driving up homeowner equity. Since the bottom in 2011, homeowner equity has nearly doubled. As of the fourth quarter of 2015, homeowner equity was at an estimated $12.5 trillion, just below the $13.3 trillion (not adjusted for inflation) that we had in 2006.

House prices are growing faster than rents, incomes, and other goods and services. The graph below compares the FHFA purchase-only house price index to per capita disposable income, rent of the primary residence, and the prices of all other goods excluding shelter.

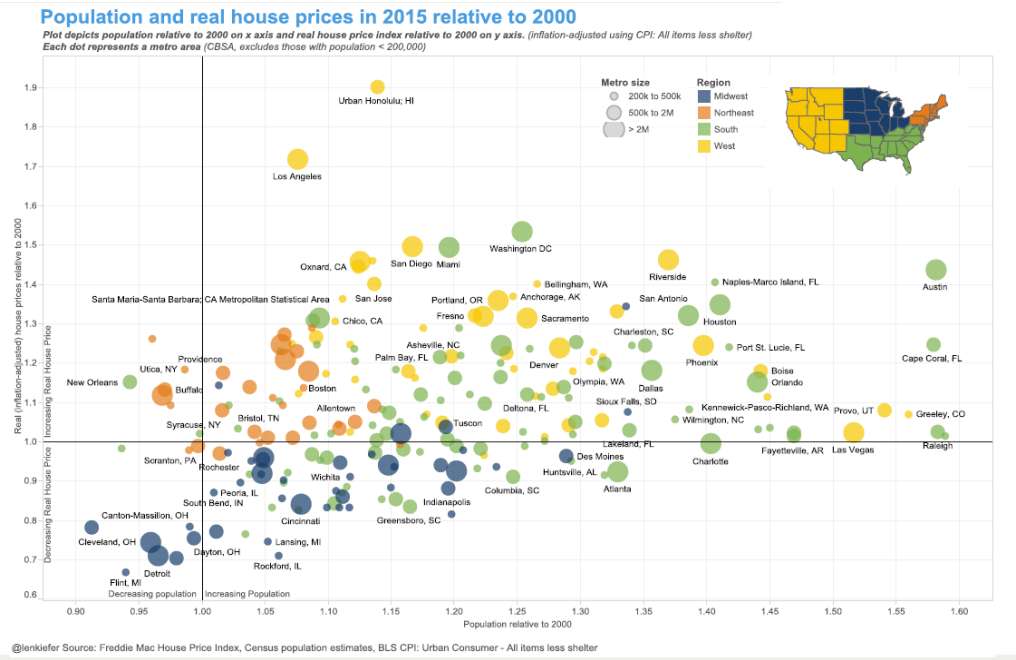


The chart shows that nationally prices are roughly in line with incomes and rents since the year 2000. But the pace of recent house price gains (about 6%) is above the rate of growth of rents and incomes.

Trends in regional house prices

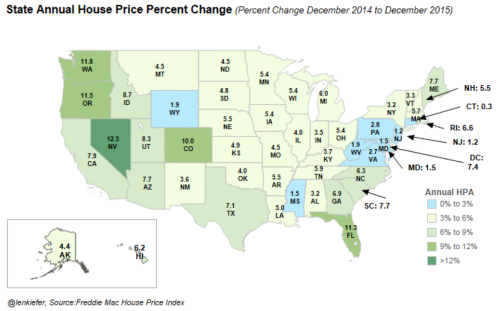
National trends obscure quite a bit of variation around the national trend. Some markets have experienced a massive boom/bust cycle, while others have been fairly stable.

The figures below compute the annual (December 2014 to December 2015) and peak-to-trough house price appreciation across states in the Freddie Mac House Price Index.

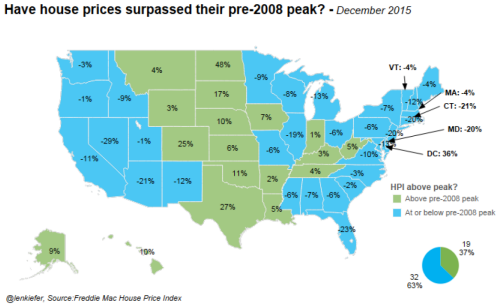


In this chart each bubble corresponds to a metro area. Along the x axis we have population growth and the y axis displays real house prices. Each metro is normalized so that population and house prices equal one in 2000. Moving to the right corresponds to faster population growth. Moving up corresponds to faster real house price growth. What's going on with this chart? Let's break it down.

Dots in the upper right quadrant have seen positive real house price appreciation and population growth since 2000. Pittsburgh, in the upper left quadrant has seen positive real house price appreciation but population loss



While the states with the fastest annual appreciation are in the West and South, states in the central United States have had the strongest house price growth through the past cycle.



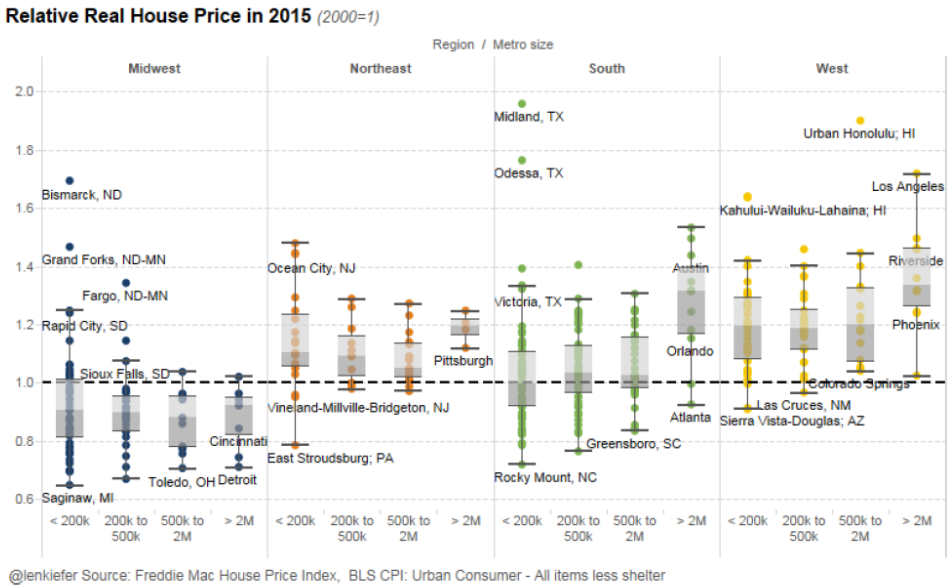
since 2000. Cleveland and Detroit in the bottom left quadrant have seen real house prices and population decline. Finally, those in the lower right quadrant have had population growth since 2000, but have seen their real house prices decline.

The metros are color coded by U.S. Census regions. The West is yellow, the South is green, the Northeast is orange and the Midwest is blue. Lots of green and yellow in the upper right, and a lot of blue in the lower left.

At the far right of the chart we have Austin, Texas. Austin's population has grown over 58 percent from 2000 to 2015 and real house prices are up over 50 percent during that time. Contrast that with Detroit in the lower left corner. Detroit's population has shrunk by about 3 percent since 2000 and real house prices have fallen by nearly 30 percent.

The following boxplots help to clarify what we're seeing. Boxplots are statistical graphics that help us characterize the distribution of data. In the following plots, each dot measures a single metro area. The box, shaded in gray, will show the points that lie between the

25th and 75th percentiles, while the whiskers show the range out to 1.5 times the distance between the 25th and 75th percentile. Values beyond the whiskers are outliers.



This is a panel boxplot which shows real house prices broken down by metro size and region. Each figure depicts the change in real house prices/population relative to the year 2000 in 2015. A value of 1 means real house prices or population is exactly what it was in 2000, while a value of 1.5 (0.5) means that real house prices or population is 1.5 (0.5) times what it was in 2000.

I've broken the data out by region and metro size. Metro size corresponds to population in the year 2015. The

largest metros, those with population greater than 2 million, tend to have the greatest house price appreciation (outside of the Midwest). Metros in the West regardless of size have tended to experience faster real house price appreciation.

Housing market drive growth, but challenges ahead

Given positive demographics (the Millennials are yet to enter peak home-buying years), housing markets should do well. First quarter growth would have been effectively zero without the 0.49 percentage points that residential investment added to GDP growth. As long as interest rates do not rise too rapidly, the outlook for housing should remain upbeat in the near term.