2019 Mortgage Market Outlook: Executive Report

January 2019

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The Squeeze Is On!

The U.S. economy is humming along nicely in the longest expansion we've had in a century. However, the housing and mortgage markets are struggling. Lack of sufficient building and reduced household mobility have created a housing inventory squeeze – there haven't been enough homes available for sale to satisfy demand. The inventory squeeze has tightened for years, accelerating home prices to the point where many potential buyers have stopped looking. With the inventory squeeze reducing purchase demand and higher interest rates decimating refinance demand, mortgage originations have fallen and created a profitability squeeze in the mortgage lending industry.

But shifts are underway. Home sales slowed for much of 2018, and home price appreciation is slowing as well. Inventory levels are flattening and in some areas are beginning to edge up. At long last, household incomes are starting to see more sustained growth. And after a slow start, Millennial home buying is accelerating.

iEMERGENT 2018-2019 Total U.S. Mortgage Finance Forecast	2018		2019		2018-2019 Δ	
	Units (mil)	Dollars (bil)	Units (mil)	Dollars (bil)	% Units	% Dollars
Total Purchase Volume	4.2	$1,121	4.4	$1,203	4.3%	7.3%
Refinance Volume Range						
Low	1.7	$399	1.6	$370	-4.5%	-5.2%
High	1.9	$459	1.9	$443		
Total 1st Lien Mortgage Volume						
Low	5.9	$1,520	6.0	$1,574	1.6%	3.8%
High	6.2	$1,581	6.3	$1,646		

Expectations for 2019

The current economic expansion will continue through 2019, but more signals are emerging that a slowdown is not far off. The stimulative effects of the 2017 tax cut are diminishing, and with a split Congress, it is unlikely any further significant stimulus will be passed. The interest rate yield curve continues to flatten, and the stock market has fallen from its September all-time high, suggesting it may have passed its cyclical peak.

For the 2019 housing market, the outlook is cautiously positive. Delinquency and foreclosure rates are back to normal levels, and home values nationally have now surpassed their Housing Boom peak. Home price appreciation will be more in line with household income gains. However, housing inventory will continue to be tight since construction will continue to lag household growth.

For the 2019 mortgage industry, we expect similar dynamics to 2018. We believe refinance volume is nearing baseline levels and purchase levels will rise enough that there will be only little change in origination volume. Thus, the profitability squeeze will continue. Expect industry consolidation to accelerate.

However, if the economy does begin to cool in 2020, that will ease pressure on interest rates and help lead to rising origination volumes.

Source	2018 Estimate			2019 Forecast			2019
	Purchase ($ B)	Refi ($ B)	Total ($ B)	Purchase ($ B)	Refi ($ B)	Total ($ B)	Purch / Refi Ratio
iEmergent	$1,121	$429	$1,550	$1,203	$407	$1,610	75% / 25%
Fannie	$1,126	$662	$1,788	$1,182	$536	$1,718	69% / 31%
Freddie	$1,206	$594	$1,800	$1,271	$424	$1,695	75% / 25%
MBA	$1,088	$600	$1,688	$1,167	$430	$1,597	73% / 27%

Note: All Forecasts are as of November 2018. iEmergent refi forecast is the average of our low & high forecasts.

Forecasters from Fannie Mae, Freddie Mac, and the MBA anticipate that the total mortgage opportunity in 2019 will decrease from 2018 because of another drop in refinance activity and moderating in the purchase market.

The main difference between our forecast and theirs is where 2018 shakes out. We believe 2018 will come in lower than they expect. However, for 2019, we see a larger purchase market gain and a smaller refi market drop. Though our total origination forecast levels are coincidently very close, ours represents a slight gain (+3.9%) whereas theirs are all very slightly down.

There are also fundamental differences in forecast methodology here. Most mortgage forecasts are generated at the national level. At iEmergent, we work from the bottom up. Our methodology for forecasting purchase opportunity begins at the census tract level by quantifying the homebuyer pool – or *the number of households that are ready, willing and able to buy a home*. The size of that pool is determined by demographic shifts (i.e., household growth) and by the relationship between the financial health of US households (demand) and housing-market issues (supply).

In addition, driving both the demand and supply sides of the equation are macroeconomic trends, regulatory and legislative actions in lending, and – as always – the individual behaviors of households across the nation.

This market-based approach gives our clients the critical information necessary to make successful tactical and strategic decisions to manage their businesses.

The map below – which illustrates change in total origination dollars - shows that approximately 1,549 counties experienced total dollar growth greater than 1.5% and 1,147 counties saw a drop in total origination volume by more than -1.5%. In most of the counties that will be flat or decrease in total originations, that decrease is a result of a drop in refinance dollars from 2018-2019.

2018-2019 Change in Mortgage Origination Dollars by County

AK

HI

iEMERGENT

2018-2019 % Change: Total Dollars

- High Loss (> -35%) (13)
- Significant Loss (-35%- -18%) (109)
- Moderate Loss (-18% - -5%) (623)
- Minimal Loss (-5% - -1.5%) (402)
- Flat (-1.5% - +1.5%) (446)
- Minimal Growth (1.5% - 5%) (578)
- Moderate Growth (5% - 12%) (763)
- Significant Growth (12% - 25%) (178)
- High Growth (>25%) (30)

Economic Conditions Overview

Current economic conditions are strong, but a year from now, the outlook is murkier:

- GDP – The long, slow expansion will continue through 2019, but perhaps not much longer. However, if and when the slowdown occurs, there is no reason yet to suggest anything but a minor correction.
- Employment – The labor market will remain strong in 2019 with the unemployment rate at a “full employment” level, leading to further hourly wage growth acceleration.
- Consumer Income – After a long period of stagnation, real household income is growing, but with an increasing wealth gap.
- Consumer net worth – Healthiest in a decade.
- Inflation – Still very stable.
- Interest rates – Long-term rates have risen but are still historically low. The Fed will continue to raise short-term rates to prevent overheating.
- Stock market – September 2018 may have been the cyclical peak. Expect volatility to continue in coming months.
- Although some leading indicators are suggesting a possible turn in the business cycle, others remain very positive.

Economic Conditions - GDP

We updated this graphic from our last update presentation, but the story remains the same. Our current economic expansion has been long, but it has also been slow. At 38 quarters (9 ½ years), it is now the second *longest* expansion (of 12) since WWII. However, in terms of average year-over-year real GDP growth, it has actually been the *slowest* expansion in modern times, with only a 2.00% annualized growth rate.

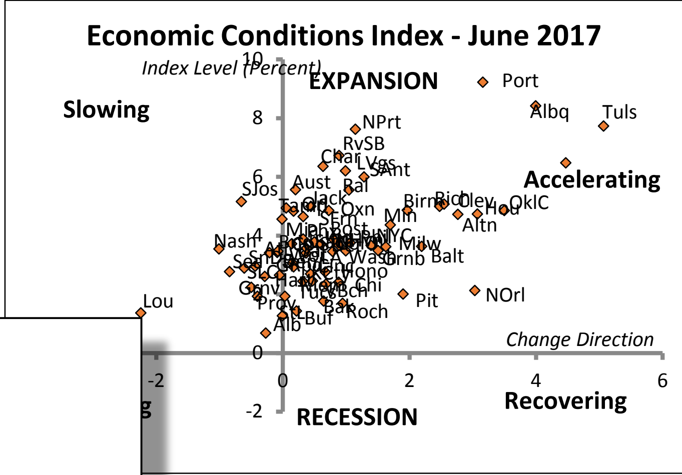
This expansion is unlikely to end before 2020, so there's little question in our minds that it will surpass the 90's expansion as the longest since WWII – as well as in the last century. But is also unlikely to accelerate very much. The stimulus impact of the tax cut enacted at the end of 2017 was felt mostly in 2018 and will be waning after that.

Expansion	Duration (quarters)	Average Y/Y GDP Growth
Q4/1945 - Q4/1948	12	4.15%
Q4/1949 - Q2/1953	14	6.90%
Q2/1954 - Q3/1957	13	3.63%
Q2/1958 - Q2/1960	8	4.96%
Q1/1961 - Q4/1969	35	4.90%
Q4/1970 - Q4/1973	12	4.74%
Q1/1975 - Q1/1980	19	4.03%
Q2/1980 - Q2/1981	4	2.21%
Q4/1982 - Q3/1990	31	4.28%
Q1/1991 - Q1/2001	40	3.53%
Q4/2001 - Q4/2007	24	2.78%
Q2/2009 -	38+	2.00%

FRED — Real Gross Domestic Product

18.0
15.0
12.0
9.0
6.0
3.0
0.0
-3.0
-6.0
Percent Change from Year Ago
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015

Around the country at the end of Q3, all major metro areas but two continued to experience positive economic conditions. But in this latest snapshot, over half of the major metros have drifted into the "slowing" quadrant. In the summer of 2017, less than one quarter of metros were slowing. (Note: "Slowing" is still in the expansion part of the chart, and many metros are still growing quite strongly. It just means the ECI is lower than in the recent past.)



Economic Conditions Index - September 2018

Index Level (Percent)

EXPANSION

Slowing

Accelerating

Sinking

RECESSION

Recovering

Change Direction

Source: St.Louis Fed, iEmergent. Economic Conditions Indexes are computed by the St.Louis Fed for 68 metro areas based on 12 economic/financial variables. iEmergent computes a "change direction" value as the difference between the latest ECI and the average of ECIs of the previous month and previous year.

Note: See https://research.stlouisfed.org/wp/more/2014-046/ for more information about Economic Conditions Indexes.

The December Unemployment rate came in at 3.9%, which virtually all economists would say is at a "full employment" level and many would suggest is even beyond that. For the last few months, we've seen the lowest levels of unemployment since the late 1960s. However, the Labor Force Participation rate and the Employment-to-Population ratio continue to run lower than they have for decades.

FRED
— Civilian Unemployment Rate (left)
— Civilian Employment-Population Ratio (right)
— Civilian Labor Force Participation Rate (right)

Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

fred.stlouisfed.org

In terms of job creation, 2018 was better than the two previous years. For 12 months, the country averaged 220,000 new jobs on an annualized basis, 21% higher than 2017. The year 2019 should see an extension of this positive trend.

New Job Creation

2018 is Best Year Since 2015

2018 Average – 220,000

Total Nonfarm Payrolls, Change, SA

400
300
200
100
-
(100)
(200)
(300)
(400)
(500)

1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 Jan-18 Mar-18 May-18 Jul-18 Sep-18 Nov-18

Source: BLS, with design credit to MBA economic research group

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Average hourly earnings growth stagnated at around 2%/year from 2010 to 2014 and ratcheted up to 2.5% in 2015 where it settled through 2017. In 2018, with a tightening labor market, earnings growth started increasing again, topping 3% for the last three months of the year. That's the highest rate of hourly earnings growth in nearly 10 years.

FRED — Average Hourly Earnings of All Employees: Total Private

Percent Change from Year Ago

4.0
3.5
3.0
2.5
2.0
1.5

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Dec 2018: 3.15315

Shaded areas indicate U.S. recessions

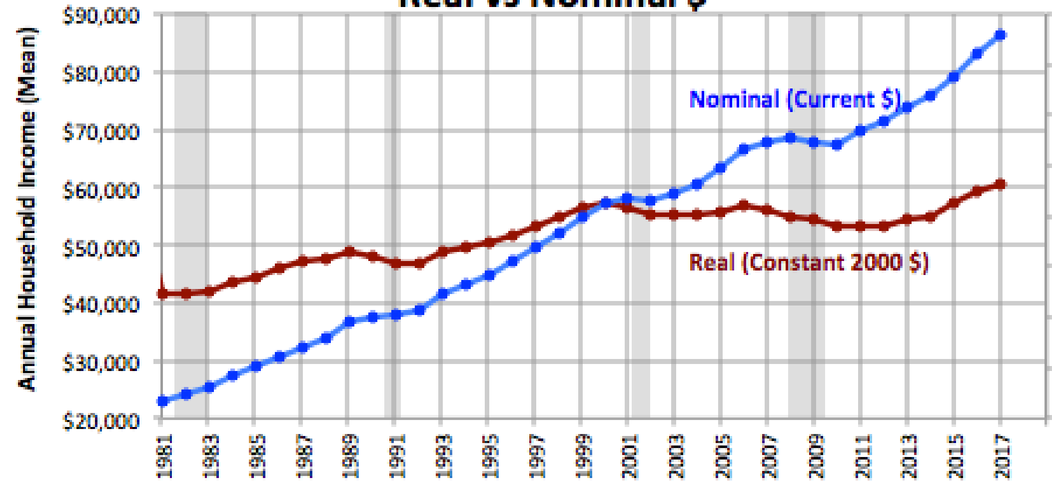
Source: U.S. Bureau of Labor Statistics

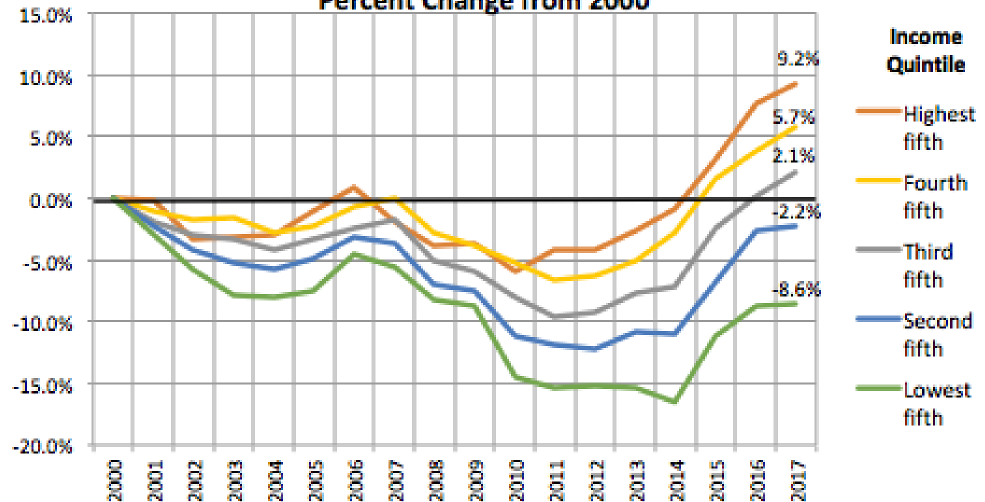
fred.stlouisfed.org

Income gains have been less positive than job gains in the current expansion, and, for that matter, since the turn of the century.

The top chart shows that nominal household income has increased nicely since 2010. But in real terms, household income has only surpassed its 2000 peak in the last three years. Thus, for most of this century, real household income has stagnated.

Moreover, the stagnation has varied across the income spectrum. Quintile analysis confirms a growing income gap between the rich and poor. While income gains in the last few years have been experienced by all income quintiles, the poorer 40% of households are still worse off than they were in 2000 – a challenge for growing homeownership.

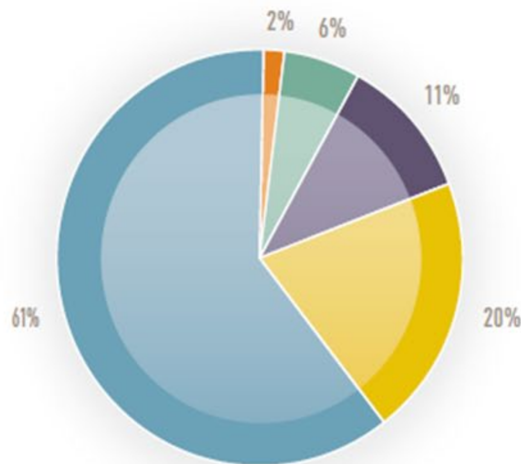




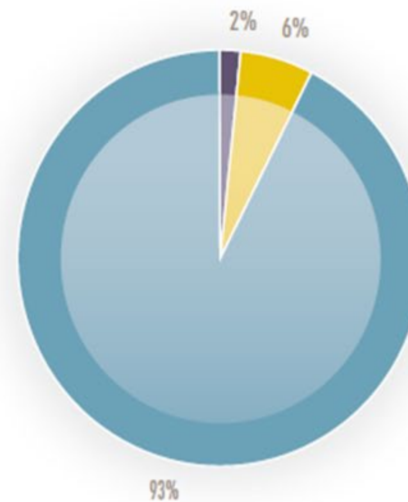
Uneven economic gains across the income spectrum have fueled a widening wealth gap, which has implications for the housing markets, as well as general political and social stability.

Most Gains in Income and Wealth Over the Past Three Decades Have Gone to the Top Fifth of Households

Share of Household Income Gains in 1989–2016



Share of Household Wealth Gains in 1989–2016



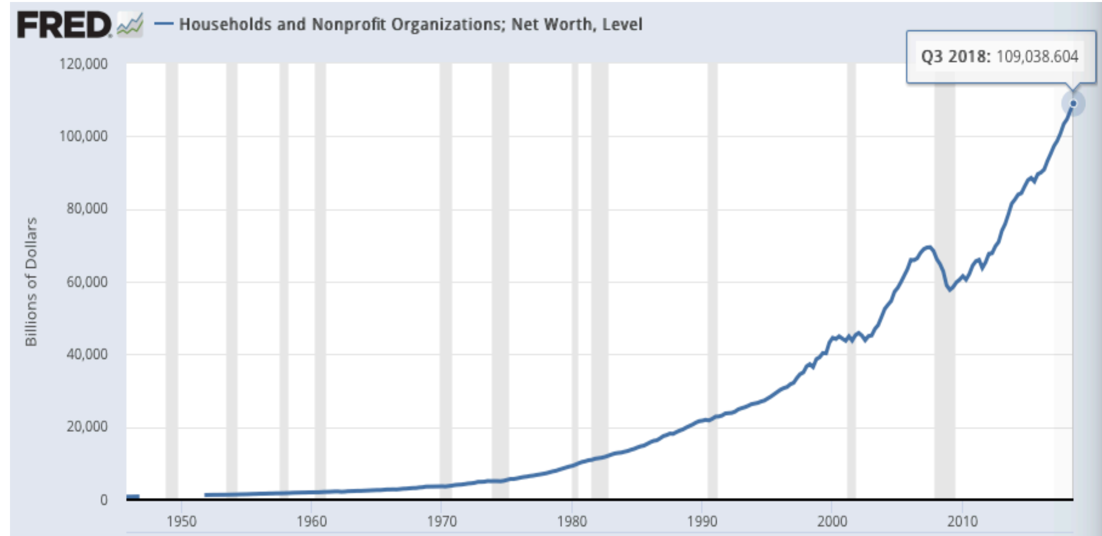
Quintile Top · Upper-Middle · Middle · Lower-Middle · Bottom

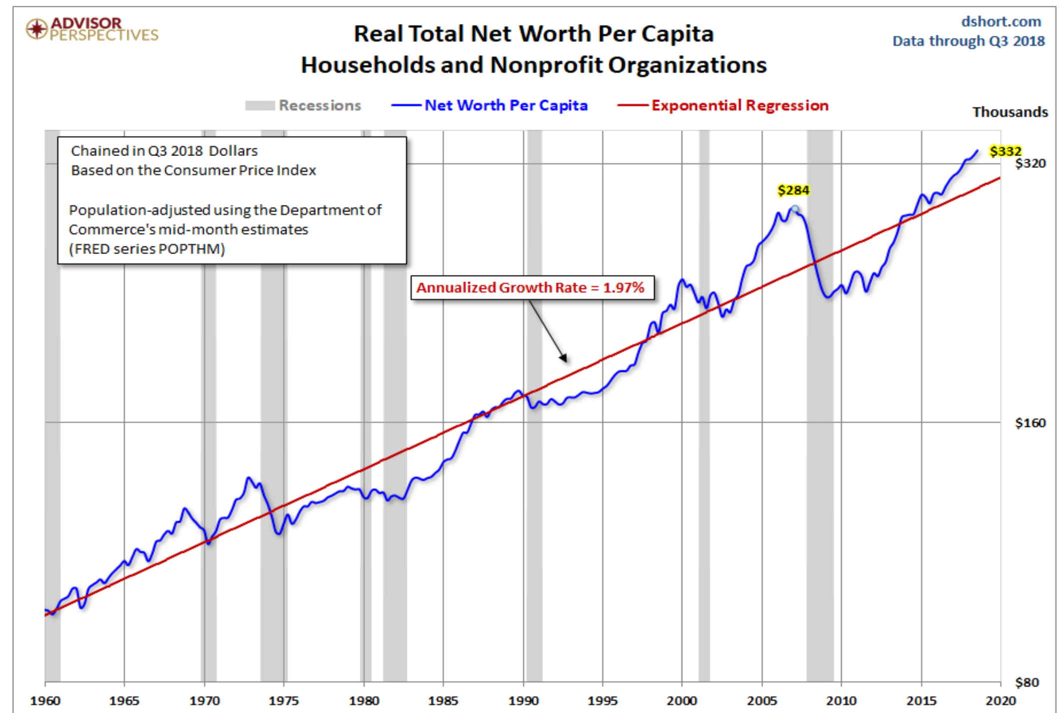
Note: Quintiles are five equal groups of households ranked by income and wealth. Shares may not sum to 100% due to rounding.
Source: JCHS (Joint Committee on Housing Studies) tabulations of Federal Reserve Board, Surveys of Consumer Finance, Current Population Studies.

Household net worth reached $109 trillion in Q3/2018, obviously a new high to what is an exponentially growing data series. Significant drivers of this growth included increasing values of residential equity and household financial assets.

This is a nominal, current dollar measure that doesn't reflect the impact of inflation or the growth in the U.S. population. The AdvisorPerspectives analysis in the second chart converts the Fed net worth series to a real (constant $), per capita basis to provide a more useful analytical viewpoint.

Real net worth per capita has grown sharply in the last year to reach a record $332 thousand dollars per household. This is nicely above the long-term trend growth rate, putting households in the healthiest financial shape they've ever been in since before the Great Recession.

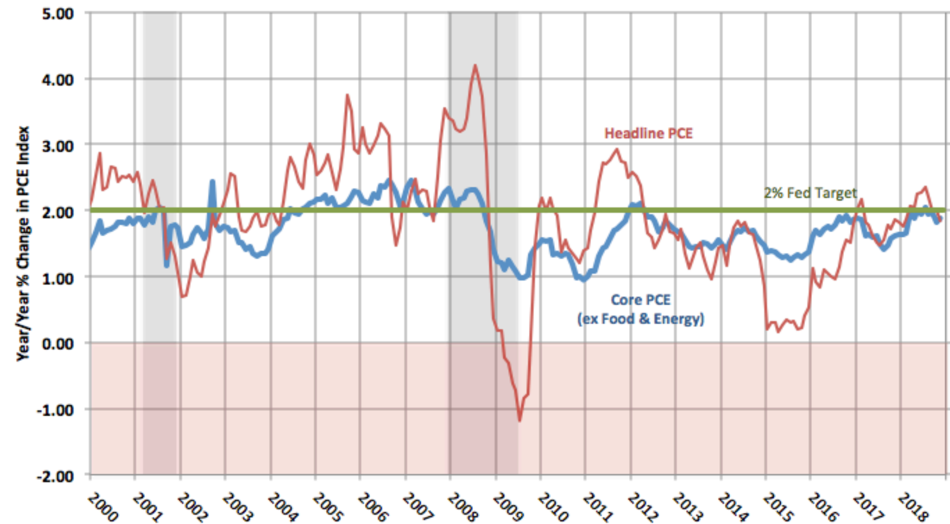


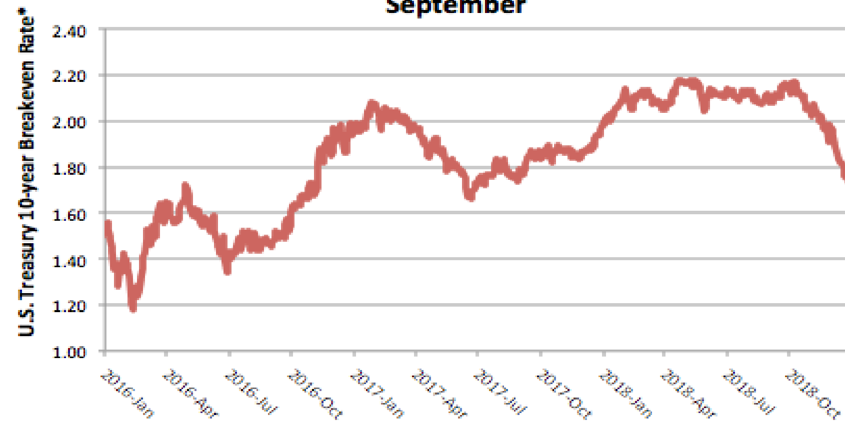


Inflation has been well under control since the late 1990s. The Federal Reserve monitors the Personal Consumption Expenditure (PCE) price index, and more particularly, the Core PCE index which excludes food and energy.

Core PCE inflation has been under the Fed's 2% target for the duration of the expansion, and after flirting with that target for much of 2018, it has drifted lower in the last two months.

Moreover, inflation expectations have fallen sharply since September according to the Treasury breakeven rate. This development may give the Fed the cover it needs to slow interest rate hikes in the coming months.





In the last two years, the two events triggering the largest moves in long-term interest rates have been President Trump's election in November 2016 and the passage of the tax cut in December 2017. Both events signaled higher deficits to financial markets, and thus, greater Treasury borrowing needs. As a consequence, Treasury bond rates rose sharply, pulling 30-year fixed mortgage rates up above 4% for most of 2017 and above 4.5% for most of 2018.

Meanwhile, on the short-term side, the Fed has steadily raised its Fed Funds Rate target, accompanied by a similar rise in other short-term rates. The short-term rate increase has been faster than the long-term increase, resulting in a flattening of the yield curve.

The last time the spread between 1-year and 10-year Treasury yields was this small and shrinking was in late 2005. Yield curve flattening is common late in the expansion phase of business cycles. Yield curve *inversion*, when short-term rates exceed long-term rates (such as from mid-2006 to mid-2007), frequently signal the peak of expansion and the beginning of recession.

FRED
— 30-Year Fixed Rate Mortgage Average in the United States
— 10-Year Treasury Constant Maturity Rate
— 1-Year Treasury Constant Maturity Rate
— Effective Federal Funds Rate

Percent
7
6
5
4
3
2
1
0

Trump Elected
Tax Cut Passed

2006 2008 2010 2012 2014 2016 2018

The S&P 500 index peaked in late September, and since then it has experienced a volatile rollercoaster ride with several days seeing changes in excess of +/- 50 points (2% of market value). In the past, the peak of the stock market has been one of several leading indicators of business cycle change, with market turning points leading business cycle turning points by an average of a little more than a year. We believe that the September 20 peak may well mark the peak of this business cycle expansion.

Famous economist and Nobel laureate Paul Samuelson once remarked that the stock market had correctly predicted nine of the previous five recessions, suggesting that the stock market may not always be an accurate leading indicator. Whether this peak is a *true* leading indicator or one of those *false* ones will soon become apparent. During this period of potential business cycle change, we expect to see continued volatility in stock market movements throughout 2019.

The Conference Board publishes monthly indexes designed to help analyze the health and strength of the U.S. economy. Their Leading Economic Index (LEI) consolidates the combined trends of 10 business and economic data series that have historically led economic performance.

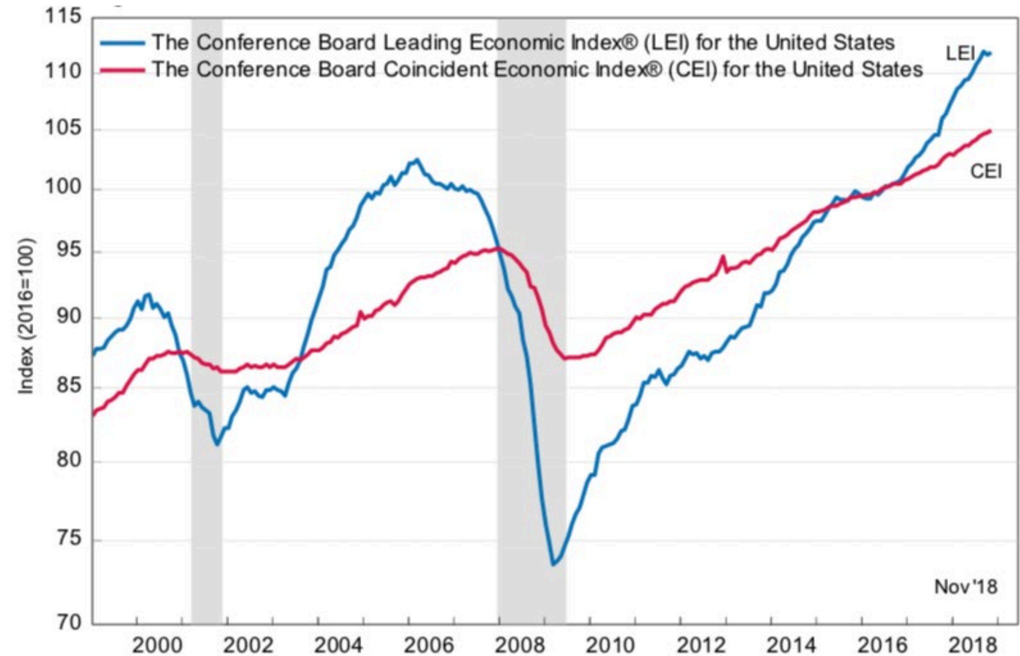
In the latest month (November data, released in December), the LEI was slightly higher than October but not as high as September, so a plateau of sorts is forming. Seven of the ten leading indicators were more positive in November, including the interest rate spread, which had improved slightly in November. However, three indicators were less positive.

Their bottom line conclusion:

> *Taken together, the current behavior of the composite indexes and their components suggests that the expansion in economic activity should continue at a solid pace in early 2019, but the pace of growth is likely to moderate further in the second half.*

- The Conference Board, Dec 20, 2018 release

Leading & Coincident Economic Indexes



<u>Leading Economic Index</u>

-	1	Average weekly hours, manufacturing
-	2	Average weekly initial claims for unemployment insurance
+	3	Manufacturers' new orders, consumer goods and materials
+	4	ISM® new orders index
+	5	Manufacturers' new orders, nondefense capital goods excl. aircraft
+	6	Building permits, new private housing units
-	7	Stock prices, 500 common stocks
+	8	*Leading Credit Index™*
+	9	Interest rate spread, 10-year Treasury bonds less federal funds
+	10	Avg. consumer expectations for business conditions

Source: The Conference Board, December 2018 release

Housing Market Conditions Overview

Despite the best overall economic conditions in well over a decade, the housing market is struggling. An inventory squeeze has been intensifying in the last few years and has reached the point where it is strangling both home sales and home value appreciation.

- **Troubled Loans** – For most of the last decade, delinquencies and foreclosures were the major housing problems, but now these loan metrics are back to normal levels.

- **Housing inventory** – Housing construction crashed during the Great Recession and never fully recovered. Single-family home construction is still far below levels of the 90s and 00s so there aren't enough new homes being built. In addition, the mobility of existing homeowners has slowed significantly, curtailing the supply of existing homes. The inventory squeeze has meant the supply of homes for sale has lagged demand for several years.

- **Home Prices** – With excess housing demand, home prices have increased at a rapid rate for several years. That's been great for restoring home equity lost by homeowners during the Housing Bust, but it has made it harder for first-time homebuyers (FTHBs) to break into homeownership. Nationally, the latest Case-Shiller HPI (for October) is 11.4% above its pre-Bust high, although a few major metros still haven't fully recovered to their previous peaks. However, home prices are now bumping up against household income constraints in more and more markets. This is slowing **home sales** and price growth.

- **Affordability** – Housing affordability has worsened in the last 5 years, but despite that, mortgage-financed housing remains more affordable now than at any time from the 80s through 2009. This is because mortgage interest rates have declined for most of this period, and they are still low relative to historical averages. For 2019, with home price growth slowing to match income growth more closely, the path of interest rates will be the major factor affecting housing affordability.

- **Homeownership rates** – They are rising again, led by gains from householders under 35 years old. FTHBs represent a growing share of total homebuyers, and Millennials represent a growing share of those FTHBs.

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Housing Market Conditions – Troubled Loans

The share of seriously troubled mortgage loans is now at the lowest level since 2007. After an uptick in the 90-day delinquency rate early last year, the rate of troubled loans continued to improve, giving housing the best foreclosure and delinquency rates in over a decade. That uptick, which came in response to damage and dislocation caused by 2017's series of devastating hurricanes in the southeast and brushfires in the west, has since been wiped away by continued economic prosperity.

Loans Seriously Delinquent or In Foreclosure

Percent of Mortgage Loans

12%
10%
8%
6%
4%
2%
0%

2Q02 4Q02 2Q03 4Q03 2Q04 4Q04 2Q05 4Q05 2Q06 4Q06 2Q07 4Q07 2Q08 4Q08 2Q09 4Q09 2Q10 4Q10 2Q11 4Q11 2Q12 4Q12 2Q13 4Q13 2Q14 4Q14 2Q15 4Q15 2Q16 4Q16 2Q17 4Q17 2Q18

Total Share of Seriously Troubled Loans
Loans in Foreclosure
Loans 90 days Delinquent
2.30%
1.25%
1.05%

Source: Mortgage Bankers Association, from Urban Institute's monthly "At a Glance" chart book.

Housing construction continues to lag behind previous economic expansions. Multifamily building starts led the way out of the recession, but they have leveled off in recent years. Single family starts, despite a steady rise since 2011, still remain far below levels of the 1990s and 2000s.

Combined residential housing starts in 2018 were only 82% of the average level from 1995-2002, not enough to keep up with the growing number of households.

Housing Starts

Single Family Starts, 000's, SAAR: 0, 200, 400, 600, 800, 1,000, 1,200, 1,400, 1,600, 1,800, 2,000

Multifamily Starts, 000's, SAAR, 5 mon avg: 0, 50, 100, 150, 200, 250, 300, 350, 400, 450

Multifamily

Single Family

1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Source: Census Bureau, retrieved from FRED, Federal Reserve Bank of St. Louis

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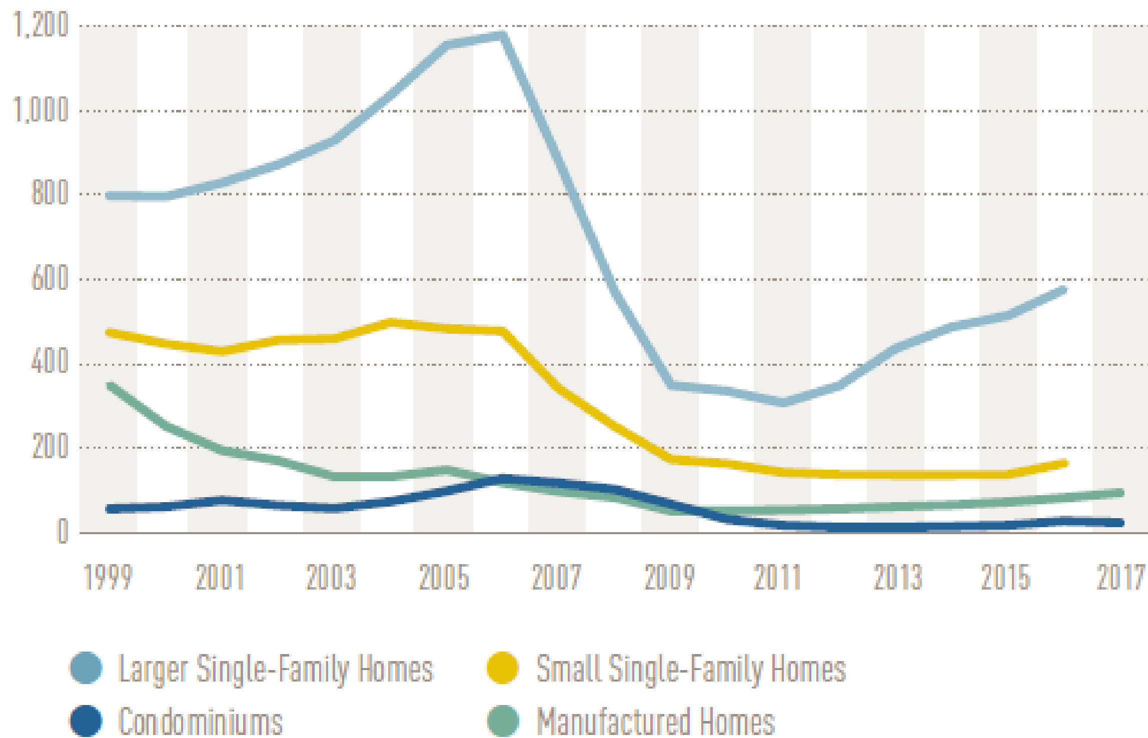
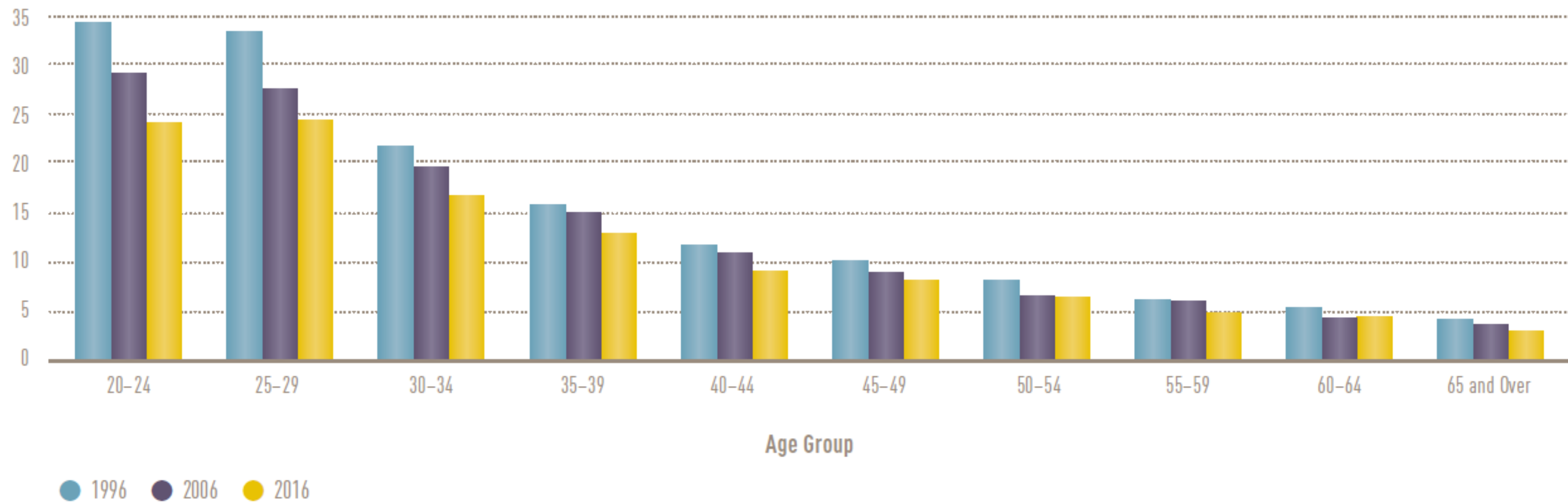
Most single family home building has been on the higher-priced side of the market with larger homes. That has put a squeeze on the low end of the housing market.



Note: Small single-family homes are under 1,800 sq.ft. and larger single-family homes are 1,800 sq. ft. and over. Condominiums are multifamily units built for sale. Manufactured homes are manufactured housing shipments. Single-family completions by home size for 2017 were unavailable at time of publication.
Source: JCHS (Joint Committee on Housing Studies) tabulations of US Census Bureau, New Residential Construction and Manufactured Housing Surveys.

Another key reason for the housing inventory squeeze is a noticeably slowing mobility rate. The movement of existing homeowners to bigger homes (as families grew) or smaller homes (as homeowners downsized) has long been a steady source of homes available for sale. But there has been a pronounced decline in homeowner movement in the last 20 years. It's a phenomenon occurring across all age groups. With people staying put in their homes, the number of *existing* homes available for sale – the largest segment of home sales – has been curtailed.



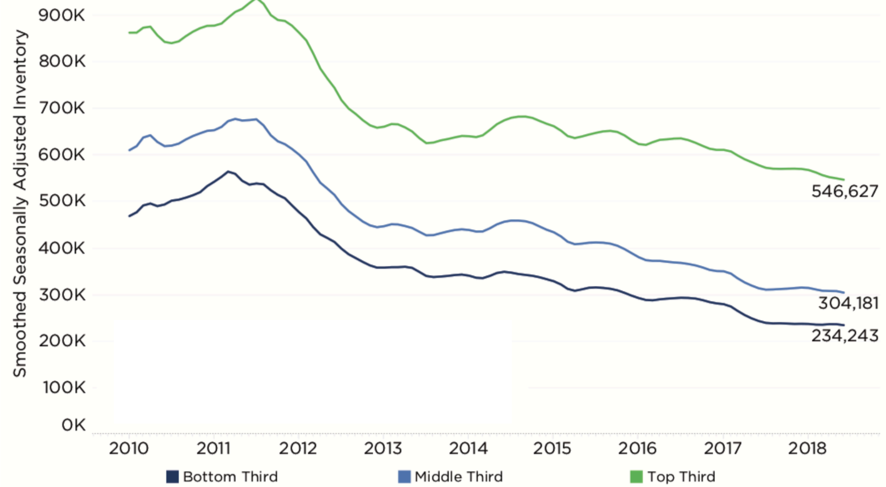
Note: Mobility rates are for all individuals at least a year old, living in households, and reporting a local, interstate or international move.
Source: JCHS (Joint Committee on Housing Studies) tabulations of US Census Bureau Current Population Surveys.

As previously mentioned, the squeeze has been particularly acute for lower priced homes. At Q2 of 2018, the inventory for the highest priced homes had fallen about -40% from its 2011 peak. However, the inventory decline for mid-priced and lower-priced homes has been significantly worse: -55% and -58%, respectively.

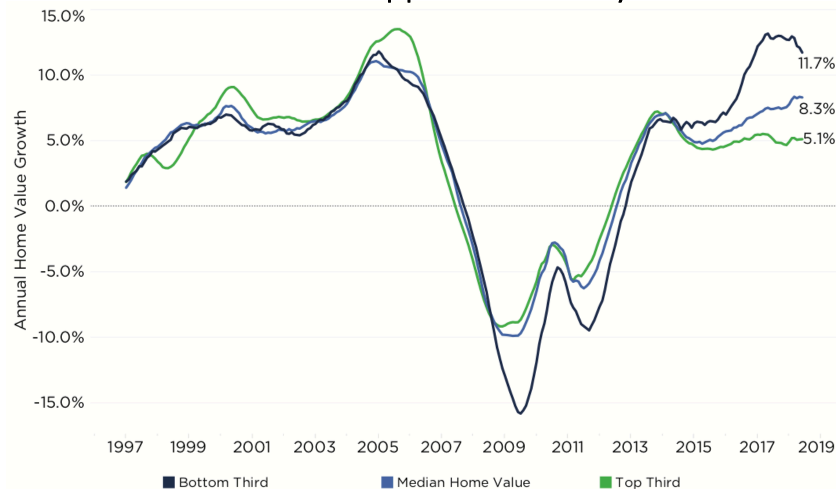
It's no surprise then that price pressure has been greatest for mid- and lower-priced homes.

Historically, when price and interest rate pressure has created affordability problems for prospective homebuyers, those homebuyers lowered their sights and bought cheaper homes. But in this environment, there have been fewer homes at the cheaper end, and thus, many frustrated potential homebuyers.

Supply of Homes for Sale – By Price Tier



Home Value Appreciation – By Price Tier

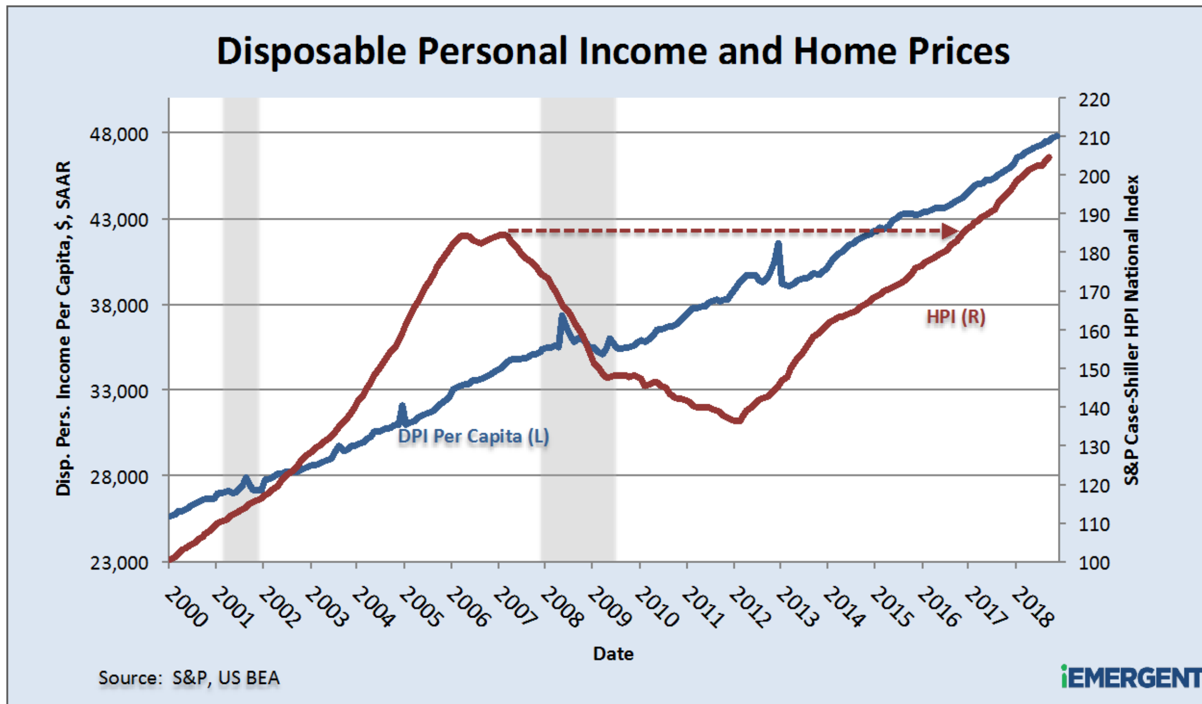


Source: Zillow

In the most recent report on the S&P Case-Shiller Home Price Index (October data, released in December 2018), the national home price index had risen 11.4% above its housing boom peak.

The Housing Bust of 2007 was triggered when home prices increased faster than incomes could support. Sales began to fall, soon resulting in an oversupply of homes, which led to price declines. That touched off a vicious cycle where sales slowed further, dragging prices down further, with growing numbers of borrowers underwater on their mortgages. Then, the cycle accelerated even more when underwater borrowers began defaulting on mortgages, leading to foreclosures, more oversupply and further price declines.

Overheated home prices began falling before the official start of the Great Recession and continued to fall well into the current expansion. They didn't begin rising again until early 2012. Since that time, home prices have increased faster than household incomes, but they haven't yet closed the gap on income increases since the expansion began. Moreover, the current housing inventory shortage means that national home price declines are not a large risk in the current environment, though there are a few markets where price declines have recently occurred. Home prices have reached the point where income constraints will drag on sales and potential price appreciation.



In fits and starts, home sales have trended down since their recent peaks in late 2017. In the most recent months, the downtrend has become especially apparent. Besides the inventory and price issue, two other factors are also affecting home sales, both having significant impact on higher-priced coastal markets. One is the less favorable treatment of the mortgage interest deduction in the recent tax reform law. The other is a reduction in foreign investment in the U.S. residential market. Chinese investment, in particular, has been instrumental in heating up west coast housing markets, and that has slowed considerably in the wake of recent trade war friction.

Home Sales

Existing Home Sales, thous, SAAR: 8,000 7,000 6,000 5,000 4,000 3,000 2,000 1,000 0

New 1-Family Home Sales, thous, SAAR: 1,600 1,400 1,200 1,000 800 600 400 200 0

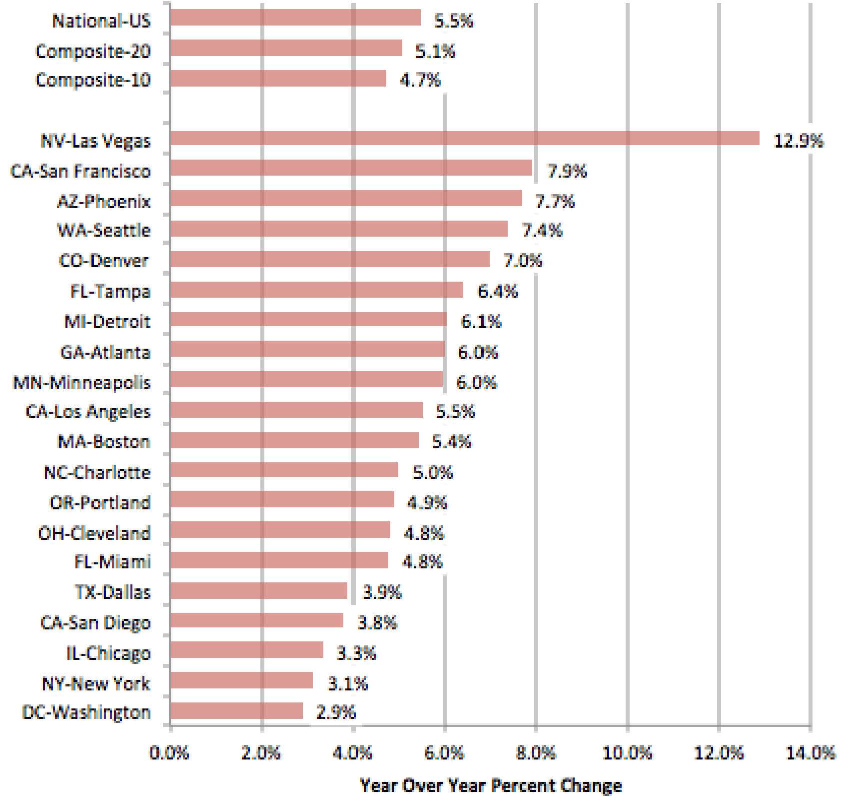
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Existing Home Sales (L axis)

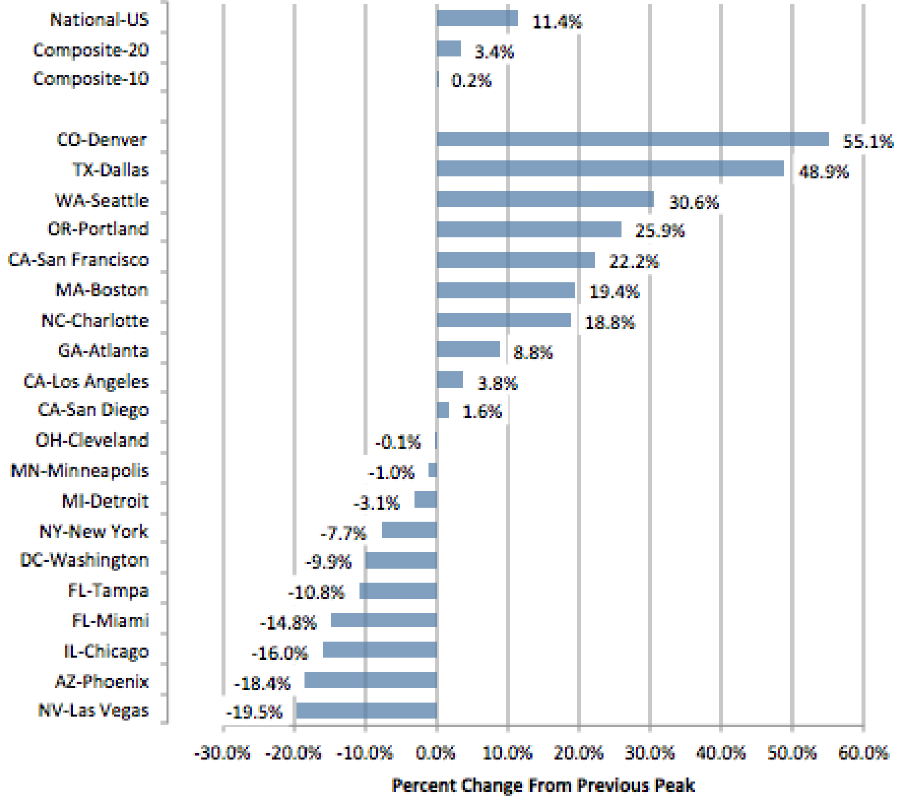
New 1F Home Sales (R axis)

Source: NAR, Census Bureau, iEmergent calculations

From market to market, home price behavior varies significantly. Home price appreciation rates for 10 of the 20 major markets are now exceeding the national average of 5.5% (left chart), and most of these are west of the Mississippi. And while the national index has regained its Housing Boom peak – it is now 11.4% above that peak – half of the top 20 markets have not matched that feat. Las Vegas, Phoenix, Chicago and the major Florida markets have the furthest yet to go; but markets including Washington DC, New York and Detroit are still below their previous peak levels as well (right chart).



Source: S&P, iEmergent calculations



As home sales cooled in 2018, the national home price appreciation (HPA) rate began to drift down. Home prices have still been rising, but at a slightly slower rate. In the west, HPA change was even more pronounced. Portland's HPA has been slowing steadily for two years, while Seattle and San Diego saw abrupt declines in their HPA rates in the second half of 2018.

Home Price Appreciation - Y/Y % Change

S&P Case-Shiller Home Price Appreciation

25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
-5.0%
-10.0%

2012 2013 2014 2015 2016 2017 2018

National-US WA-Seattle CA-San Diego OR-Portland

Source: S&P, iEmergent calculations

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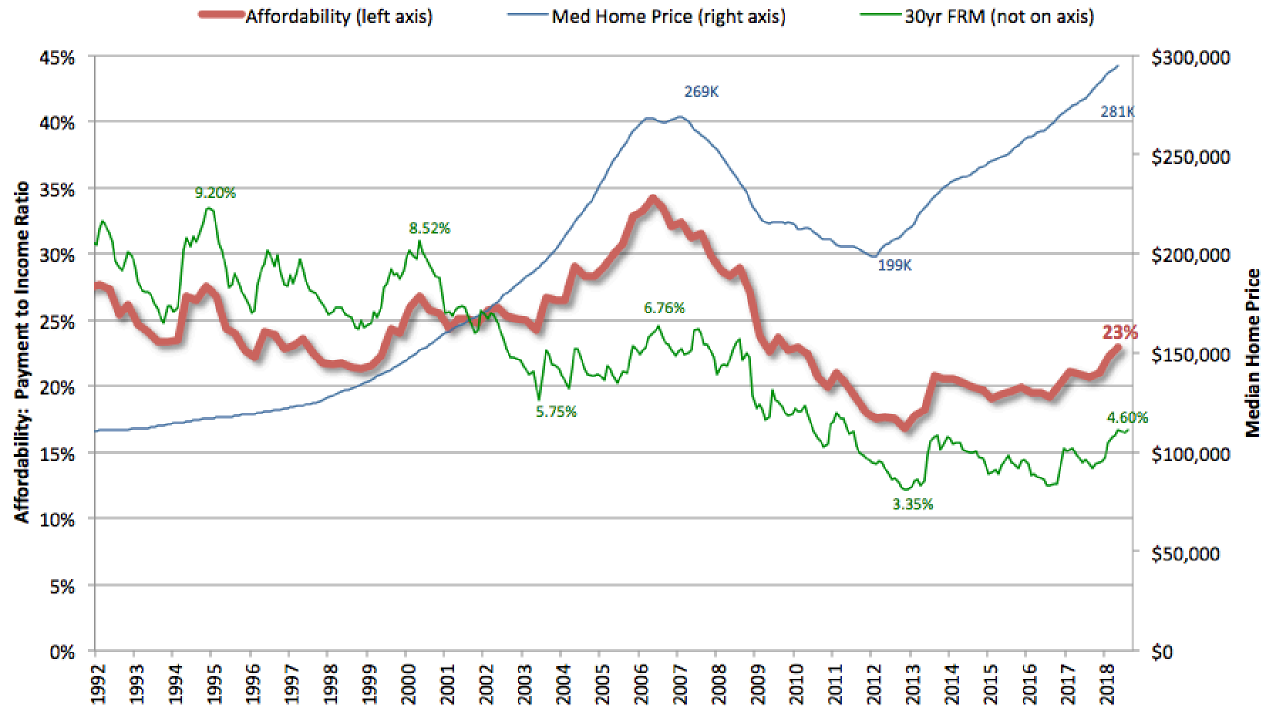
Even though home prices rose steadily after 2012, housing affordability, as measured by the mortgage payment-to-income ratio, stayed relatively constant from 2013 to mid-2016 because mortgage interest rates declined over that period. For the last year and a half, though, affordability has grown worse, driven mostly by the rise in interest rates. However, housing continues to be more affordable now than at any point from the 1990s through 2009, except for a short period in the late 90s. Nationally, 23% of the median household income can pay for a mortgage on the median priced house.

Home prices should continue to rise and so should household incomes – probably at a rate that nearly cancels out price increases. Affordability will continue to depend on the path of mortgage interest rates for the next few years.



* Payment to Income Ratio is the percent of the median household income required to make payments on a median priced home with a 30-yr fixed rate mortgage at 80% LTV.
Source: iEmergent calculations using data from FHLMC, Census Bureau, S&P, BEA

iEMERGENT

Another telling point regarding housing affordability is how housing costs between renters and homeowners compare. In the fifteen years before 2001, rent payments averaged 26% of renters' household income, while halfway through 2018, renters are paying 28% of their income. In contrast, for homeowners with a mortgage, the historical average was 21%. Now they are paying 18% due to mortgage interest rates that are still low by historical standards.

Zillow Mortgage and Rent Affordability

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

Rent

30%
28%
26%
24%
22%
20%
18%
16%
14%
12%

Average Share of Income Spent on Rent, 1985-2000

Average Share of Income Spent on Mortgage, 1985-2000

28%

18%

Mortgage

1988 1993 1998 2003 2008 2013 2018

Share of Income Spent on Housing

Source: Zillow, "Housing Market Overview 2018 Q2," powerpoint presentation.

Affordability, of course, is different depending on where you live. This map provides an illustration of that difference. Not only are the east coast and western metros experiencing the highest home values and prices, they are also the areas where the home-value-to-income ratios are the highest. And for many California metros, home value-to-income ratios are among the highest in the country.

Home Value-to-Income Ratios Vary Between Markets

AK

HI

Home Value-to-Income Ratio by Metro - 2018

- 1.4 - 1.9
- 2.0 - 2.3
- 2.4 - 2.7
- 2.8 - 3.5
- 3.6 - 4.7
- 4.8 - 6.7

Data source: EASI Analytics, Inc. Map created by iEmergent.

The homeownership rate (HOR) in the U.S. had been declining steadily for over a decade and reached lows not seen since the mid-1960s. But since Q2/2016, the HOR has risen steadily from its low of 62.9% up to 64.4% in Q3/2018. Part of this has been due to sustained healthy economic conditions, but more significantly, the large Millennial segment has finally reached the point where they are buying homes in growing numbers.

ADVISOR PERSPECTIVES

Census Bureau: Homeownership Rate

dshort.com
October 2018
Data through Q3

Recessions — Nonseasonally Adjusted Data — 4-Quarter MA

The homeownership rate is the percent of homes that are owner-occupied.

2004 Peak

69.2%

Currently at 64.4%
4Q MA at 64.3%

65.8%

63.5%

64.3%

63.4%

62.9%

62.9%

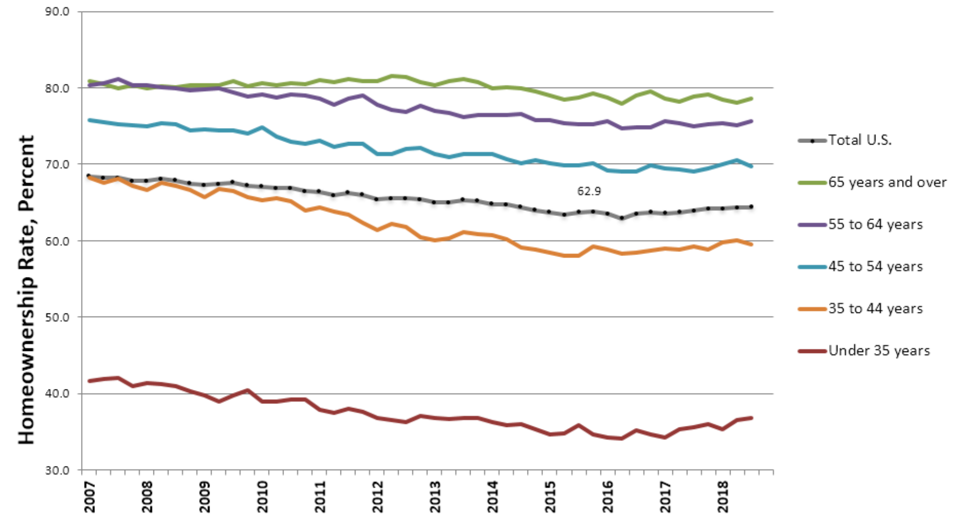
70%
69%
68%
67%
66%
65%
64%
63%
62%
61%
60%

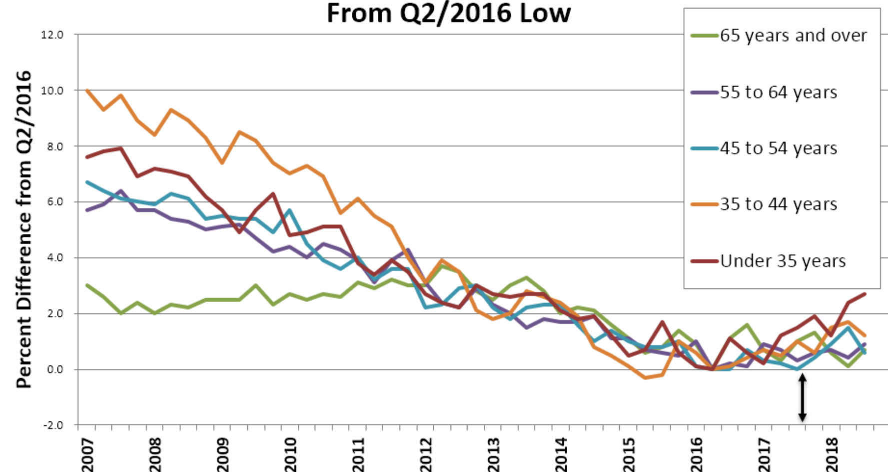
1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015 2020

Deconstructing the national homeownership rate into age segments shows the expected general dynamic that the homeownership rate increases with age.

It also reveals other insights:

- The 35-44 segment (primarily the youngest segment of Gen X) was hurt most by homeownership rate declines during the Housing Bust. They were the unfortunate people who bought more homes closest to the top of the market.
- The 65 and older segment was barely affected at all by the Housing Bust but has declined since the Bust ended. The primary cause of this is likely the movement of households in the 55-64 age group into the 65+ group in the last 6 years.
- Since the homeownership rate low-point in Q2/2016, the youngest group (under 35) has led the way higher, followed by the 35-44 segment. The Millennial generation is increasingly dominating the rise in homeownership.

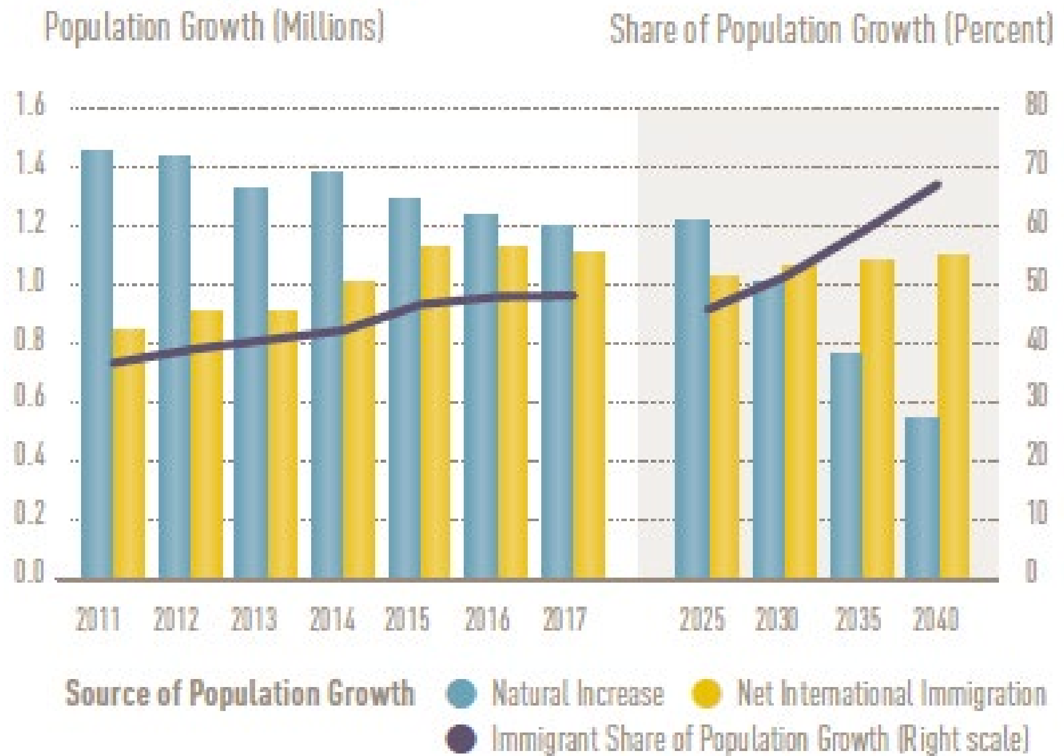




Source: Census Bureau Housing Vacancy Survey

The composition of homeownership in the country is also changing. More and more, foreign-born households are taking a larger role in housing demand, simply because immigration is assuming a growing share of U.S. population growth.

This chart shows that the native-born U.S. gains to population are slowly but steadily declining, while immigration has steadily increased its share of population growth.*



Note: Natural increase is the number of births minus deaths in the resident population.
Source: JCHS tabulations of US Census Bureau, Population Estimates and 2017 Population Projections from Harvard University Joint Center for Housing Studies, *State of the Nation's Housing, 2018.*

* Note: This point refers to the composition of the *gains to population*, not to the population itself. To clarify, in 2016, while immigrants comprised 48% of the gains to population, they comprised only 13.5% of the *total* U.S population.

Most of households in the Millennial generation are now smack in the middle of their peak home buying years. It took a while for them to get there. The Millennials formed households later (at an older age) and bought their first homes later than any previous generation.

Generations in the United States

Generation	Age in 2018	Born
Millennial	Ages 22-37	Born 1981-1996
Generation X	Ages 38-53	Born 1965-1980
Baby Boomer	Ages 54-72	Born 1946-1964
Silent	Ages 73-90	Born 1928-1945

Birth Year: 1930 1940 1950 1960 1970 1980 1990 2000

Source: Pew Research Center

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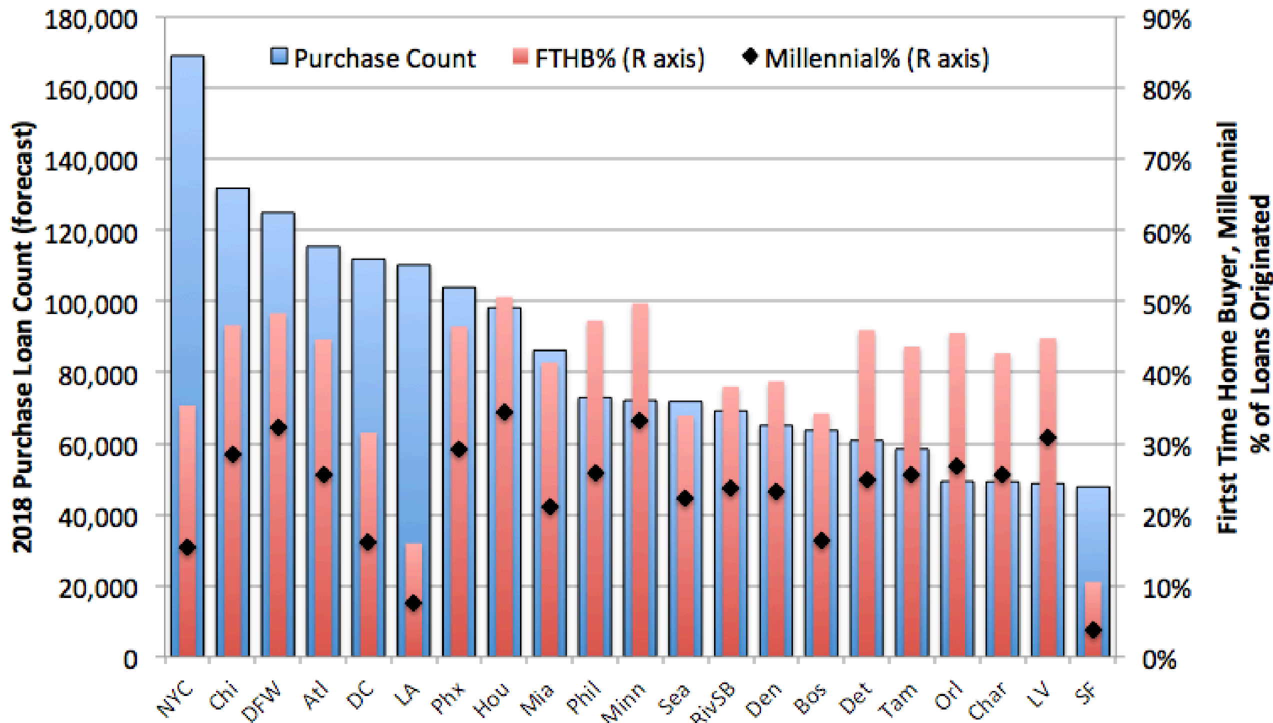
The first-time homebuyer (FTHB) share of the purchase market is now over 42% and continues to grow. The Millennial portion of that FTHB segment is up to nearly 60% and also continues to grow. However, from market to market, those percentages can vary considerably depending on housing affordability conditions and income levels by age group. For instance, in 2018, we estimate that the New York core-based statistical area (CBSA) had the the most purchase loans, but Chicago had the most FTHB loans and Dallas/Ft. Worth had the most Millennial loans. And while 69% of the Las Vegas FTHB segment was made up of Millennial buyers, Millennials made up only 4% of the San Francisco purchase market.



Mortgage Market Overview

- As expected, mortgage originations have fallen in 2018 due to another sharp decline in refinance volume. For 2019, we expect refinances to decline another -5%, which is not as much as many forecasters fear, because refis are reaching baseline levels dominated by cash-out transactions.
- Given the current robust economic conditions and an ever-growing, more affluent Millennial segment, purchase volume will continue to grow in 2019 by an expected 7%, though it will still be constrained by tight inventories in many markets.
- In total, the size of the 2019 mortgage originations market will be slightly higher (4%) than the 2018 market.
- Credit availability continued to be too tight in 2018 and has more room to loosen in 2019.
- Traditional banks continue to reduce their footprint in mortgage lending as independent mortgage lenders increase their market share. Independents continue to lead the way at expanding credit availability to borrowers with lower FICO scores.
- Powered by strong home price appreciation, the value of homeowners' equity has increased significantly in the last six years, raising the opportunity for increased home equity lending and cash-out refinancing. However, with price moderation in some of the high-priced coastal markets, "tappable" home equity may have topped out.

Despite continued growth in the purchase segment, 2018's mortgage volume fell, as expected, due to another contraction in refinance volume.

For 2019, we expect a modest gain in purchase of 7%, with a further -5% decline in refi. The net result will be a mortgage market slightly higher than 2018's market (by 4%), with an even smaller refi share of 25%.

Source: Historical data from MBA and HMDA. 2018 and 2019 forecast from iEmergent (using midpoint refi estimate).

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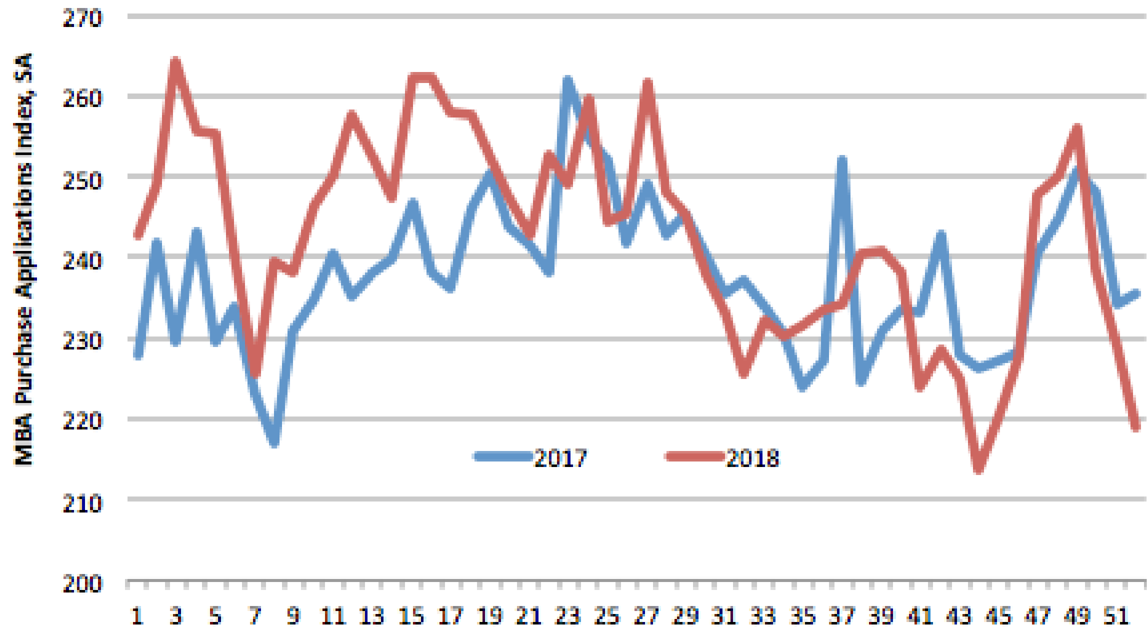
The *MBA's Purchase Applications Index* is a leading indicator of the eventual counts of loans originated. Looking at the index from a year-over-year perspective, as shown below, highlights the fact that in 2018 purchase applications started the year ahead of 2017. Through week 18, on average, that difference was 6.5% higher. Since week 18 (early May), however, that volume difference has averaged -0.3% lower, reflecting the tighter inventory and affordability pressures that have constrained purchase demand.



Refinance volume is largely dependent on mortgage interest rates, which in turn are dependent on bond rates (specifically, 10-yr Treasury rates) that are notoriously hard to predict. For that reason, we generally present our refi forecast as a range.

Since the beginning of 2018, mortgage rates have trended up with periodic downticks. They peaked in early November 2018 about 100 bps above where they started the year but then dropped significantly through December. Refinance applications have drifted lower as rates have risen, but they are becoming less sensitive to rate spikes and dips. *Inside Mortgage Finance* reported that for the first three quarters of 2018, refi originations were down -19% from the same period in 2017, putting 2018 on track for more than a -25% decline in refinance volume. At this point, we expect refi volume in 2019 to decline another -5% to -9%.

Mortgage Rates & Refi Applications
Thru December 2018

30-Year FRM Rate, Percent: 5.00, 4.75, 4.50, 4.25, 4.00, 3.75, 3.50, 3.25, 3.00

MBA Refi Application Index, Mar 16, 1990 = 100, (Inverted Scale): 200, 700, 1,200, 1,700, 2,200, 2,700, 3,200

2015-Jan, 2015-Feb, 2015-Mar, 2015-Apr, 2015-May, 2015-Jun, 2015-Jul, 2015-Aug, 2015-Sep, 2015-Oct, 2015-Nov, 2015-Dec, 2016-Jan, 2016-Feb, 2016-Mar, 2016-Apr, 2016-May, 2016-Jun, 2016-Jul, 2016-Aug, 2016-Sep, 2016-Oct, 2016-Nov, 2016-Dec, 2017-Jan, 2017-Feb, 2017-Mar, 2017-Apr, 2017-May, 2017-Jun, 2017-Jul, 2017-Aug, 2017-Sep, 2017-Oct, 2017-Nov, 2017-Dec, 2018-Jan, 2018-Feb, 2018-Mar, 2018-Apr, 2018-May, 2018-Jun, 2018-Jul, 2018-Aug, 2018-Sep, 2018-Oct, 2018-Nov, 2018-Dec

MBA Refi Index
30-Yr FRM Rate, %

Source: FreddieMac, MBA

MORTGAGE MARKET OUTLOOK – REFI COMPOSITION

With rising mortgage interest rates, refinance volumes have dropped off considerably, especially for rate and term refinances. However, for homeowners needing to tap into their home equity, the cash-out refi remains a popular option, far less sensitive to rising rates. This is because the other equity-tapping options, HELOCs and closed-end 2nd liens, are tied to short-term interest rate indexes which have risen faster than long-term mortgage rates. HELOCs are also constantly adjusting as rates rise, while a fixed refi rate gets locked in upon origination.

Cash-out refi demand forms a baseline floor for refinance volume and will limit how much further refinance volume falls in the expected rising rate environment of 2019.

FIRST-LIEN REFINANCE ACTIVITY

Cash-out Refi Originations (left axis)
Rate/Term Refi Originations
Cash-out Share of First Lien Refis (right axis)

First Lien Refinance Originations in Millions: 0.0, 0.5, 1.0, 1.5, 2.0

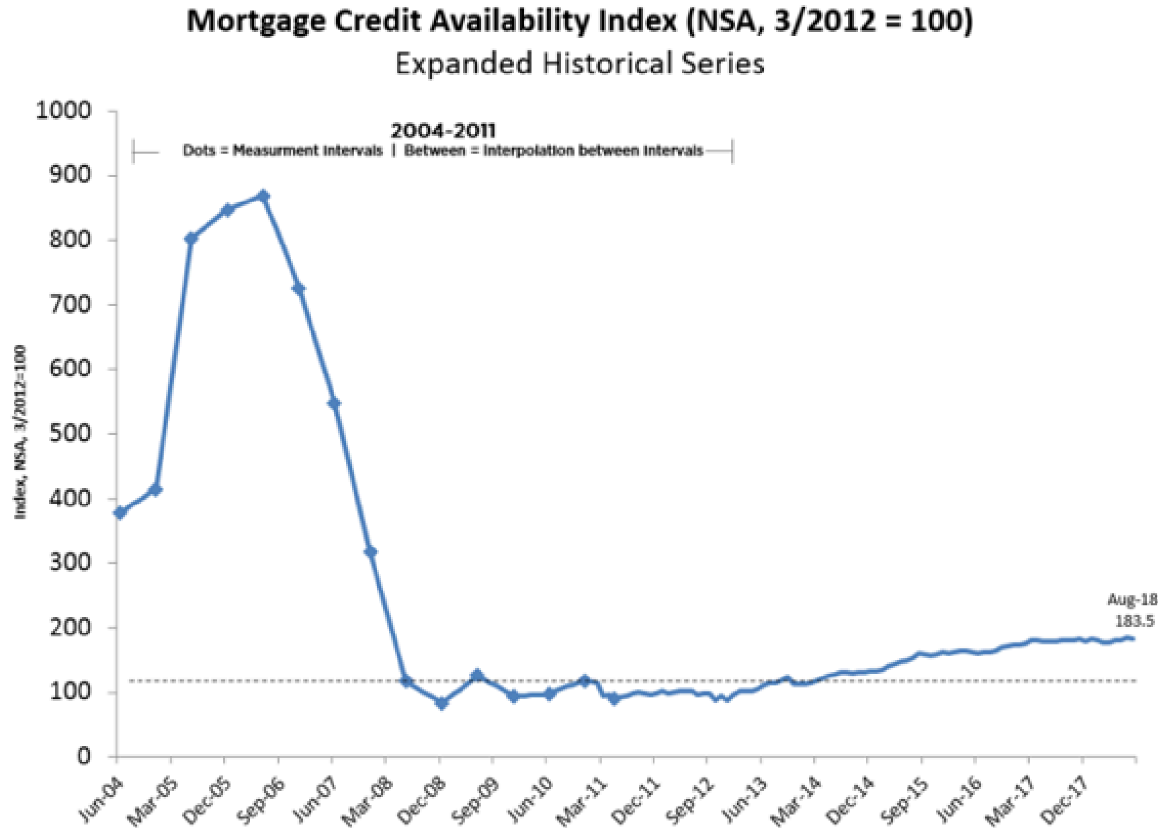
Cash-out Share of First Lien Refis (By Count): 0%, 20%, 40%, 60%, 80%, 100%

82%

Q1 Q2 Q3 Q4 — 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018

Source: Black Knight Financial Services, *Mortgage Monitor*, Oct 2018

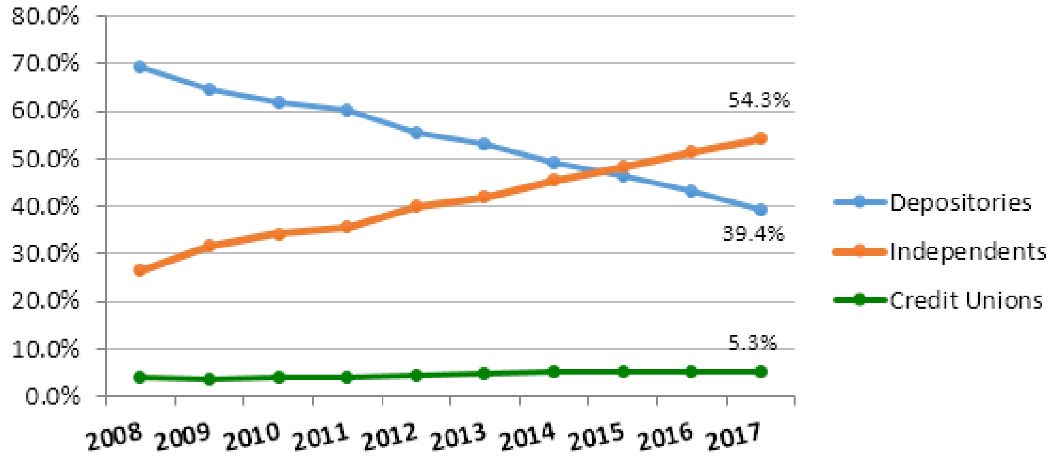
Mortgage credit availability is on the rise, say the reports, to the highest levels in over 10 years. However, it is still far below levels of 2004 and before. There is no question that mortgage credit was far too loose from 2005-2007, but we believe it continues to be too tight in 2018.



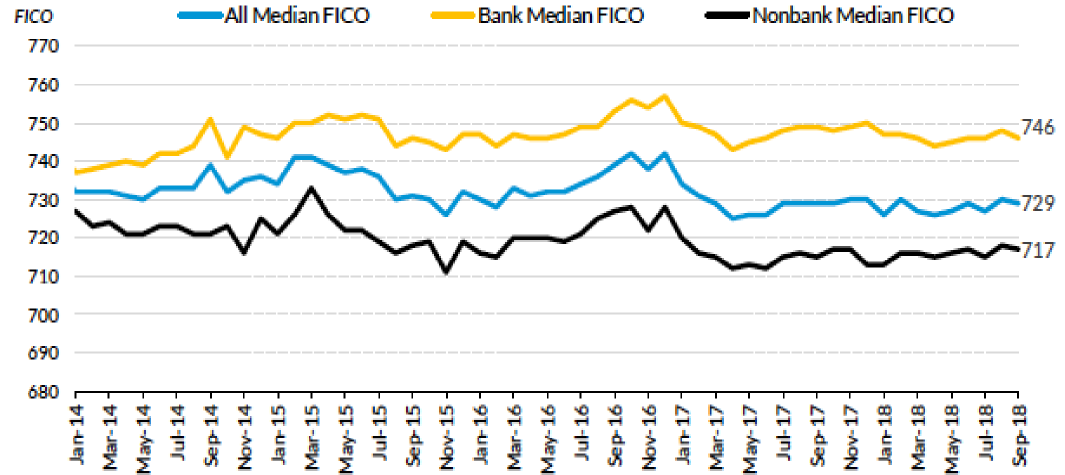
Source: *Mortgage Bankers Association; Powered by Ellie Mae's AllRegs® Market Clarity®*

Just a few years ago, most mortgages were originated by banks. But in the last few years, independent mortgage lenders have doubled their purchase originations share of the market from 27% to 54%.

Nonbanks are also increasingly aggressive at expanding credit availability to borrowers. Nonbanks' median FICO scores have run about 30 points lower than bank median FICO scores for the last two years.



Source: HMDA data from FFIEC



Sources: eMBS and Urban Institute.

Mortgage lending is a low margin business, even in the best of times, but with reduced production volume and higher operating costs in the wake of the Financial Crisis, profits have been squeezed in 2017 and 2018. Years of rising production volumes, such as 2003 and 2012, really help lender profitability. But with another year of low production volume expected in 2019, we see little relief from the profitability squeeze.

Challenging Times: Production Profitability Dropping in 2017 and 2018

Source: MBA and STRATMOR Peer Group Roundtable, as reported at MBA Annual Conference, Oct 2018 by Marina Walsh.

Homeowners’ equity has soared since home values started appreciating again in 2012. In Q2 of 2018, BKFS calculates that the “tappable” value of homeowners’ equity reached a record high of over $6 trillion, 40% more than the value of mortgage debt outstanding. It fell slightly in Q3 due to higher interest rates and softening price appreciation affecting some of the higher priced and equity-rich coastal markets. However, this is still 20% higher than the peak year of 2005. With such a windfall we expect to see more households tapping into this wealth through home equity loans and cash-out refis.

TAPPABLE EQUITY OF U.S. MORTGAGE HOLDERS

Tappable Equity in $Billions

Period	Tappable Equity
2004-12	$4,285
2005-12	$4,914
2006-12	$4,627
2007-12	$3,755
2008-12	$2,830
2009-12	$2,603
2010-12	$2,370
2011-12	$2,234
2012-12	$2,557
2013-12	$3,123
2014-12	$3,557
2015-12	$4,122
2016-12	$4,690
2017-12	$5,425
2018-03	$5,806
2018-06	$6,083
2018-09	$5,943

Equity available on mortgaged residential properties before reaching a current CLTV of 80%

Source: Black Knight Financial Services, *Mortgage Monitor*, Oct 2018

In Summary…

- Robust economic conditions will continue in 2019 giving us the longest economic expansion in over a century. Growth is expected to moderate late in the year, with a chance of slowdown in 2020. Inflation is on target, and employment conditions are the best they've been in a decade, but interest rates are on the rise.

- The housing market will continue to struggle despite the fact that delinquency and foreclosure rates have returned to healthy levels. Inadequate construction has led to an inventory squeeze that has accelerated home price growth to levels where they are constraining sales.

- Housing affordability has worsened in recent years but is still better than it has been for most of our lifetimes. Despite that, the homeownership rate is on the rise again after a decade of decline, driven primarily by the late arrival of the Millennial generation to its peak home-buying stage of life.

- Mortgage originations fell in 2018 but we expect them to rise slightly in 2019. Rising purchase volumes should offset another decline in refinances. Profitability will continue to be squeezed for mortgage lenders, and traditional banks will continue to reduce their share of the home finance market.

- As we finalized this presentation, the federal government shutdown was in its fifth week, the longest shutdown we've ever experienced, and it still showed no end in sight. In our judgment, if this impasse is not soon rectified, it represents the kind of triggering event that could prematurely end the current economic expansion.

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2018-2019 Originations by State

State	2018 Mortgage Originations (Est.)					2019 Mortgage Originations (Proj.)				2018-2019 % Change	
	Purchase Loans (#)	Purchase Dollars ($B)	Total Loans (#)	Total Dollars ($B)	% Purchase ($)	Purchase Loans (#)	Purchase Dollars ($B)	Total Loans (#)	Total Dollars ($B)	Total Loans	Total Dollars
AK	8,500	$2.66	11,300	$3.33	80%	8,300	$2.71	10,800	$3.33	-4.4%	0.0%
AL	61,900	$12.0	86,200	$16.1	75%	66,800	$13.31	91,300	$17.42	5.9%	8.5%
AR	39,300	$6.9	51,300	$8.7	79%	42,000	$7.67	54,300	$9.54	5.8%	9.2%
AZ	132,100	$32.0	186,000	$43.8	73%	141,300	$35.06	193,900	$46.62	4.2%	6.5%
CA	390,700	$175.5	721,200	$295.2	59%	412,300	$190.31	707,000	$296.76	-2.0%	0.5%
CO	107,300	$33.5	162,000	$47.2	71%	105,200	$33.82	152,600	$45.62	-5.8%	-3.3%
CT	48,000	$14.8	68,900	$20.4	73%	55,100	$17.33	77,400	$23.25	12.3%	14.2%
DC	8,700	$4.9	13,600	$7.1	70%	9,000	$5.37	13,400	$7.34	-1.5%	3.4%
DE	14,800	$4.0	20,900	$5.4	74%	15,200	$4.21	21,100	$5.58	1.0%	3.9%
FL	318,400	$76.3	398,400	$92.9	82%	326,200	$79.71	408,800	$96.95	2.6%	4.4%
GA	153,400	$33.8	210,300	$44.5	76%	160,500	$36.11	216,700	$46.56	3.0%	4.7%
HI	14,800	$7.8	23,100	$11.4	69%	15,500	$8.53	23,300	$11.88	0.9%	4.6%
IA	46,900	$7.6	64,000	$10.1	75%	47,400	$7.95	63,000	$10.25	-1.6%	1.5%
ID	33,400	$7.0	44,600	$9.0	77%	33,200	$7.18	43,800	$9.12	-1.8%	1.0%
IL	162,200	$37.0	237,800	$53.1	70%	171,800	$39.98	245,200	$55.61	3.1%	4.8%
IN	100,600	$17.0	138,100	$22.3	76%	107,600	$18.60	145,200	$23.92	5.1%	7.3%
KS	36,400	$7.0	49,400	$9.1	77%	36,900	$7.36	49,300	$9.34	-0.2%	3.0%
KY	57,900	$10.2	80,000	$13.6	75%	62,300	$11.39	84,600	$14.82	5.8%	9.0%
LA	40,300	$8.8	55,700	$11.5	77%	39,500	$8.92	53,500	$11.37	-3.9%	-1.0%
MA	86,300	$31.6	132,800	$45.0	70%	89,400	$33.41	132,000	$45.72	-0.6%	1.5%
MD	86,200	$29.7	129,000	$41.9	71%	92,100	$32.97	133,900	$44.95	3.8%	7.3%
ME	19,000	$4.2	26,700	$5.7	75%	20,100	$4.61	27,800	$6.03	4.1%	6.6%
MI	129,000	$21.7	187,800	$30.5	71%	134,300	$22.71	189,500	$30.97	0.9%	1.5%
MN	91,200	$20.2	128,300	$27.4	74%	93,900	$21.40	129,000	$28.27	0.5%	3.1%
MO	93,000	$16.9	130,900	$23.1	73%	99,100	$18.51	136,600	$24.70	4.4%	6.8%
MS	28,600	$5.1	39,400	$6.7	76%	31,200	$5.68	42,100	$7.27	6.9%	9.4%

Note: The totals in this table are derived using the midpoint of iEmergent's forecast range for refinance activity.

2018-2019 ORIGINATIONS BY STATE

State	2018 Mortgage Originations (Est.)					2019 Mortgage Originations (Proj.)				2018-2019 % Change	
	Purchase Loans (#)	Purchase Dollars ($B)	Total Loans (#)	Total Dollars ($B)	% Purchase ($)	Purchase Loans (#)	Purchase Dollars ($B)	Total Loans (#)	Total Dollars ($B)	Total Loans	Total Dollars
MT	14,600	$3.8	20,300	$5.0	75%	15,300	$4.07	20,800	$5.27	2.5%	5.6%
NC	151,300	$34.8	204,100	$44.8	78%	154,600	$36.50	206,000	$46.31	0.9%	3.3%
ND	8,400	$1.9	11,700	$2.5	78%	8,000	$1.92	10,800	$2.39	-7.7%	-3.9%
NE	24,400	$4.4	33,100	$5.6	77%	23,700	$4.38	31,400	$5.53	-5.1%	-2.0%
NH	21,500	$5.4	30,500	$7.4	74%	23,000	$5.96	32,000	$7.92	4.9%	7.6%
NJ	103,400	$33.6	152,600	$47.3	71%	109,700	$36.21	157,600	$49.57	3.3%	4.9%
NM	21,300	$4.5	29,900	$6.1	74%	22,200	$4.87	30,600	$6.45	2.3%	5.6%
NV	56,100	$13.5	77,600	$18.4	74%	59,500	$14.40	80,200	$19.02	3.4%	3.6%
NY	141,700	$52.9	188,900	$66.1	80%	147,200	$56.72	193,600	$69.75	2.5%	5.6%
OH	149,900	$25.3	204,300	$33.2	76%	157,900	$27.17	212,200	$34.97	3.9%	5.4%
OK	44,100	$8.1	56,900	$10.0	81%	44,900	$8.52	57,400	$10.38	0.9%	3.9%
OR	57,800	$17.1	83,200	$23.0	74%	56,900	$17.45	80,100	$22.84	-3.7%	-0.6%
PA	139,500	$29.3	196,900	$39.2	75%	144,700	$31.22	200,100	$40.82	1.6%	4.2%
RI	15,800	$3.9	23,600	$5.6	70%	17,400	$4.37	25,100	$6.03	6.4%	8.4%
SC	86,600	$19.7	113,100	$24.9	79%	93,200	$21.72	120,700	$27.12	6.7%	9.1%
SD	11,100	$2.3	15,000	$2.9	77%	11,200	$2.37	14,900	$3.00	-0.7%	2.4%
TN	104,500	$22.7	142,000	$29.2	78%	111,600	$25.11	149,200	$31.63	5.1%	8.4%
TX	358,200	$87.9	459,800	$106.6	82%	368,700	$93.95	467,800	$112.10	1.7%	5.1%
UT	60,400	$15.7	87,100	$21.5	73%	59,300	$16.05	83,100	$21.21	-4.6%	-1.2%
VA	129,100	$42.8	189,500	$59.3	72%	137,900	$47.97	197,000	$64.38	4.0%	8.5%
VT	6,600	$1.6	9,900	$2.2	72%	6,800	$1.69	9,800	$2.27	-1.0%	2.6%
WA	125,100	$42.5	183,000	$57.8	73%	128,800	$45.57	183,500	$60.14	0.3%	4.1%
WI	77,900	$14.7	118,300	$21.2	69%	79,900	$15.48	117,400	$21.59	-0.8%	1.7%
WV	14,800	$2.7	20,100	$3.5	77%	15,100	$2.81	20,200	$3.59	0.5%	2.9%
WY	7,600	$1.9	10,400	$2.5	76%	7,400	$1.93	10,000	$2.49	-3.8%	0.1%
Total	4,240,600	$1,121.2	6,059,500	$1,550.3	72%	4,421,100	$1,203.2	6,157,600	$1,610.0	1.6%	3.8%

Note: The totals in this table are derived using the midpoint of iEmergent's forecast range for refinance activity.

OUR COMPANY

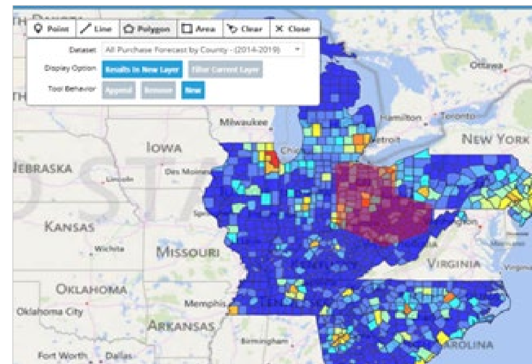
iEmergent is a forecasting and advisory firm for the lending industry. Since 2000, we have been focused on delivering a forward-looking approach to helping organizations navigate the industry's changing landscape. After nearly 20 years as an executive at two national lenders, our founder leveraged his background in mathematics and predictive modeling to develop a groundbreaking method for forecasting mortgage opportunity. In addition to our forecasts, we provide strategic advisory services to lenders of all sizes and types, as well as mortgage insurance, title, and investment companies. Viewed as industry leaders, we have been featured in Mortgage Banking magazine, HousingWire, National Mortgage News, Origination News, Inman News, and the Credit Union Journal.

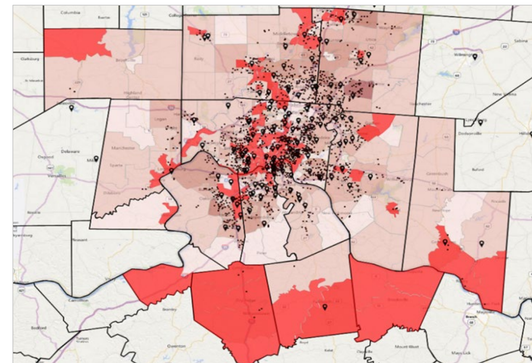
OUR PRODUCTS

iEmergent provides accurate, forward-looking data that quantifies what's next in mortgage markets across the nation. As housing and lending sputter and stutter toward recovery, our forecasts drill down into states, metro areas, counties, and neighborhoods to quantify where and how mortgage opportunity will grow, slow, or stay the same.

Most clients access our data through Mortgage MarketSmart, a web application with dynamic maps. This powerful visualization tool brings HMDA and detailed forecast data to life, helping organizations easily make decisions about high-level strategic opportunities and tactical, market-level challenges:

- Expand and grow responsibly
- Improve sales strategies at all levels
- Optimize resources, brand, and locations
- Recruit, hire, train, and retain sales resources
- Minimize distribution risk and meet CRA/Fair Lending regulations





FORECAST SEGMENTS

Market Geography
- State
- MSA
- County
- Census Tract

Market Segments
- Occupancy Types
- Custom Loan Sizes
- Conventional Loan Type
- FHA,VA, FSA Loan Types
- Jumbo, Conforming
- Borrower Income Levels
- Borrower Race/Ethnicity
- First Time Homebuyer
- CRA Eligible
- New Construction Sales
- Custom Loan Sizes
- Refinance Ranges

For more information about Mortgage MarketSmart, our forecasts, or advisory services, call Fenn Meents at 515-327-0070 (x101).