Housing Affordability Constrains as the Expansion Matures

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Macroeconomic Developments

Check out Fannie Mae's Economic and Housing Outlook at http://fanniemae.com/portal/research-and-analysis/emma.html

Housing Contribution to Growth Increases, a Bit

Contribution to Percent Change in Real GDP (Q4/Q4)

Source: Bureau of Economic Analysis, "Fannie Mae Economic & Strategic Research February 2016 Forecast"
Labor Conditions Are Improving

Low Unemployment Rate Overstates the Health of the Job Market

Wage Growth Subdued, but Builds Momentum

Revolving Consumer Credit Rises in Real Terms
The Strengthening Dollar is Contributing to the Reduction in Trade

The Dollar Pushes Higher

U.S. Trade Fell Throughout 2015

Nominal Trade, SA, Year-over-Year % Change, 3-month MA

Oil and Gas Investments Decline Amid Low Oil Prices

Oil and Gas Well Drilling Production Mirrors the Last Recession

Oil Rig Count Plummetes
Employment Growth Slowing in Oil Producing States

Year-over-Year Change in Payroll Employment in Oil Producing States

<table>
<thead>
<tr>
<th>Share of Payroll Employment in Mining &amp; Logging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyoming</td>
</tr>
<tr>
<td>North Dakota</td>
</tr>
<tr>
<td>Alaska</td>
</tr>
<tr>
<td>West Virginia</td>
</tr>
<tr>
<td>Oklahoma</td>
</tr>
<tr>
<td>New Mexico</td>
</tr>
<tr>
<td>Texas</td>
</tr>
<tr>
<td>Louisiana</td>
</tr>
</tbody>
</table>

State-Level Effects of Low Oil Prices

Total Private Employment: Year-over-Year Change

Mining & Logging Employment: Year-over-Year Change

Home Price: Year-over-Year Change

Housing Starts: Year-over-Year Change

Source: Bureau of Labor Statistics, FHFA, Bank of Tokyo
The Fed and Interest Rates

Check out Fannie Mae's Economic and Housing Outlook at http://fanniemae.com/portal/research-and-analysis/emma.html

Real Interest Rates Have Trended Lower for Over Three Decades

Source: Federal Reserve Bank of Cleveland
The Fed Expects to Start Talking About Its Balance Sheet Later This Year

Source: Federal Reserve Board

Intermediate Rates Have Fallen Since the Announcement of a Rate Hike

10-Year Treasury Note Yield at Constant Maturity (% Daily Close Rate)

Source: U.S. Treasury

12/16 Fed announces interest rate hike
Fed’s MBS Holdings Constant for Now

September FOMC Minutes

• “A staff briefing provided background on the macroeconomic effects of alternative approaches to ceasing reinvestments of principal on securities held in the SOMA after the Committee begins to normalize the stance of policy by increasing the target range for the federal funds rate.”

• “…The Committee made no decisions regarding its strategy for ceasing or phasing out reinvestments at this meeting.”

“The Committee will continue its policy of reinvesting proceeds from maturing Treasury securities and principal payments from agency debt and mortgage-backed securities. As highlighted in our policy statement, we anticipate continuing this policy “until normalization of the level of the federal funds rate is well under way.” – Janet Yellen, December 16, 2015

2016 Economic Outlook – Moderate Economic Growth Continues

<table>
<thead>
<tr>
<th>Economic Indicator</th>
<th>February 2016 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP Annual Growth</td>
<td>2.0%</td>
</tr>
<tr>
<td>Unemployment Rate (Year-end)</td>
<td>4.7 %</td>
</tr>
<tr>
<td>Core CPI (Year-end)</td>
<td>1.7%</td>
</tr>
<tr>
<td>10-Year Treasury Bond Yield (Year-end)</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Source: Fannie Mae Economic & Strategic Research February 2016 Forecast
Housing/Mortgage Market

Check out Fannie Mae’s Economic and Housing Outlook at http://fanniemae.com/portal/research-and-analysis/emma.html

Household Formation Ends an Otherwise Impressive 2015 on a Soft Note

Total Number of Households, Break-adjusted (Thous) Change – Year-to-Year

Source: Census Bureau
Projected Household Growth is Picking Up and Its Composition is Changing

Historical data (blue) end in 2014 because that is the last year for which ACS data are available.

Average Annual Household Growth (000s)


Non-Hispanic Whites

Minorities

Racial and Ethnic Minorities Should Continue to Account for the Bulk of Household Growth

Home Purchase Sentiment Index™ (HPSI) Suggests Growth, but Slower in 2016

Home Purchase Sentiment Index (HPSI) = \( \frac{Q12 + Q13 + Q15 + Q20B + Q112B + Q116}{6} + 63.5 \)

Question Topic

Q.12 Is this a good time to buy a house?
Q.13 Is this a good time to sell a house?
Q.15 Will home prices go up, down, or stay the same over the next 12 months?
Q.20B Will mortgage rates go up, down, or stay the same over the next 12 months?
Q.112B How concerned are you about losing your job over the next 12 months?
Q.116 How does your monthly income compare with 12 months ago?

Source: U.S. Census Bureau, Fannie Mae Economic & Strategic Research projections, Decennial Census, Fannie Mae National Housing Survey™, The Conference Board, University of Michigan, Fannie Mae Home Purchase Sentiment Index™
Single-Family Housing Supply is Still Behind the Curve

Tight Supply of Single-Family Construction Compared to Population

Multifamily Construction Picks Up the Pace

The Increase in Housing Starts in the Current Recovery is Behind What We’ve Seen in the Past

Source: Census Bureau
Housing Demand is Moving Ahead of Supply

Existing Home Sales Bounce Back in December, New Home Sales Growth Recovering Slowly

Balance of Existing Home Sales to New Home Sales Shows Current Market Supply Imbalance

Real Home Price Appreciation Still Well Above Long-Term Averages

Tight Supply May Further Support Home Price Growth

Real Home Prices Have Not Fully Recovered

Source: Census Bureau, National Association of REALTORS®

Source: National Association of REALTORS®, CoreLogic, Federal Housing Finance Agency, Bureau of Economic Analysis
Housing Affordability Moves to the Forefront

Affordability Still Above Normal, but Declining
NAR Affordability Index: Composite (Fixed + Arm)


Real Home Price Rising Faster Than Real Rents, but Real Rents Rising as Well
Price-to-Rent Ratio

Peak
3/2006
1.8
↑ 64%
Height of Housing Market
Historical Low
1/1995
1.1
Trough
5/2012
1.2 ↓ ; 33%

Height of Housing Market
Note: Price-to-Rent: The ratio is calculated by dividing the FHFA repeat-purchase home price index by the U.S. Bureau of Labor Statistics (BLS) consumer price sub-index on Owner's Equivalent Rent

A Lack of More Affordable Properties May Impact Potential First-Time Homebuyers

CoreLogic National Home Price Index
(Jan '00=100, Year-over-Year Change)

Existing Home Inventory by Price Tier
(Year-over-Year Change)

Tier 1: 0-75% of median, Tier 2: 75%-100% of median, Tier 3: 100%-125% of median, Tier 4: 125%+ of median

Note: Tier 1: -25% of median, Tier 2: -20% of median, Tier 3: -15% of median, Tier 4: -10% of median

Source: CoreLogic

Source: Fannie Mae Economic & Strategic Research Forecast

Note: Tier 1: 0-75% of median, Tier 2: 75%-100% of median, Tier 3: 100%-125% of median, Tier 4: 125%+ of median
Continuing to See Faster Home Price Appreciation Among Moderately Priced Homes

<table>
<thead>
<tr>
<th>MSA Name</th>
<th>Low Tier Year-over-Year % Change</th>
<th>Mid Tier Year-over-Year % Change</th>
<th>High Tier Year-over-Year % Change</th>
<th>Low - Mid Tier Change</th>
<th>Low - High Tier Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>7.95%</td>
<td>7.55%</td>
<td>4.93%</td>
<td>▲ 0.40%</td>
<td>▲ 3.02%</td>
</tr>
<tr>
<td>Boston</td>
<td>8.09%</td>
<td>5.66%</td>
<td>3.80%</td>
<td>▲ 2.43%</td>
<td>▲ 4.29%</td>
</tr>
<tr>
<td>Chicago</td>
<td>7.13%</td>
<td>2.99%</td>
<td>0.01%</td>
<td>▲ 4.14%</td>
<td>▲ 7.12%</td>
</tr>
<tr>
<td>Denver</td>
<td>16.30%</td>
<td>11.24%</td>
<td>8.15%</td>
<td>▲ 5.06%</td>
<td>▲ 8.15%</td>
</tr>
<tr>
<td>Las Vegas</td>
<td>7.95%</td>
<td>7.81%</td>
<td>4.20%</td>
<td>▲ 0.14%</td>
<td>▲ 3.75%</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>8.82%</td>
<td>6.79%</td>
<td>4.72%</td>
<td>▲ 2.03%</td>
<td>▲ 4.10%</td>
</tr>
<tr>
<td>Miami</td>
<td>11.79%</td>
<td>9.17%</td>
<td>6.44%</td>
<td>▲ 2.62%</td>
<td>▲ 5.35%</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>8.17%</td>
<td>5.72%</td>
<td>1.73%</td>
<td>▲ 2.45%</td>
<td>▲ 6.44%</td>
</tr>
<tr>
<td>New York</td>
<td>4.47%</td>
<td>3.83%</td>
<td>2.40%</td>
<td>▲ 0.64%</td>
<td>▲ 2.07%</td>
</tr>
<tr>
<td>Portland</td>
<td>13.77%</td>
<td>10.58%</td>
<td>9.43%</td>
<td>▲ 3.19%</td>
<td>▲ 4.34%</td>
</tr>
<tr>
<td>Phoenix</td>
<td>11.53%</td>
<td>7.24%</td>
<td>3.70%</td>
<td>▲ 4.29%</td>
<td>▲ 7.83%</td>
</tr>
<tr>
<td>San Diego</td>
<td>9.88%</td>
<td>6.16%</td>
<td>5.22%</td>
<td>▲ 3.72%</td>
<td>▲ 4.66%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>10.93%</td>
<td>10.42%</td>
<td>10.97%</td>
<td>▲ 0.51%</td>
<td>▼ -0.04%</td>
</tr>
<tr>
<td>Seattle</td>
<td>8.95%</td>
<td>8.52%</td>
<td>9.28%</td>
<td>▲ 0.43%</td>
<td>▼ -0.33%</td>
</tr>
<tr>
<td>Tampa</td>
<td>16.11%</td>
<td>8.53%</td>
<td>4.92%</td>
<td>▲ 7.58%</td>
<td>▲ 11.15%</td>
</tr>
<tr>
<td>Washington DC</td>
<td>3.61%</td>
<td>2.10%</td>
<td>1.22%</td>
<td>▲ 1.51%</td>
<td>▲ 2.39%</td>
</tr>
</tbody>
</table>

Note: Percentage change in S&P/Case-Shiller Home Price Index (SA) from October 2014 to October 2015.

Rental Market Should Be Strong for Another 3 Years

High Rental Demand Driving Appreciation

Multifamily Starts Are on a V-Shape Recovery As Rental Vacancy Rate Trends Down Sharply

Source: S&P/Case-Shiller

Source: Census Bureau, Bureau of Labor Statistics
Mortgage Rates Dip Even Lower

2016 Housing Outlook – Up from 2015, but Slower Growth

<table>
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<tbody>
<tr>
<td>Housing Starts</td>
</tr>
<tr>
<td>Up 11% to 1.234 million</td>
</tr>
<tr>
<td>New Single-Family Home Sales (% Change Year-over-Year)</td>
</tr>
<tr>
<td>Up 11.3% to 558 thousand</td>
</tr>
<tr>
<td>Total Existing Home Sales (Single-Family, Condos, and Co-Ops)</td>
</tr>
<tr>
<td>Up 2.7% to 5.402 million</td>
</tr>
<tr>
<td>FHFA Purchase-Only Index (Annual Percent Change Q4/Q4)</td>
</tr>
<tr>
<td>Up 5.2%</td>
</tr>
<tr>
<td>Purchase Mortgage Originations</td>
</tr>
<tr>
<td>$950 billion</td>
</tr>
<tr>
<td>Refinance Mortgage Originations</td>
</tr>
<tr>
<td>$558 billion</td>
</tr>
<tr>
<td>30-Year Fixed Rate Mortgage (Year-end)</td>
</tr>
<tr>
<td>3.8%</td>
</tr>
</tbody>
</table>

Source: Fannie Mae Economic & Strategic Research February 2016 Forecast
Douglas G. Duncan is Fannie Mae’s senior vice president and chief economist. He is responsible for providing all forecasts and analyses on the economy, housing, and mortgage markets for Fannie Mae. Duncan also oversees corporate strategy and is responsible for strategic research regarding external factors and their potential impact on the company and the housing industry. He serves as a voting member of the Fannie Mae Finance Committee.

Under his leadership, in 2015 Fannie Mae’s Economic and Strategic Research Group won the NABE Outlook Award presented annually for the most accurate GDP and Treasury note yield forecasts. In addition, the Group was awarded Pulsenomics best home price forecast.

Named one of Bloomberg / BusinessWeek’s 50 Most Powerful People in Real Estate, Duncan is Fannie Mae’s source for information and analyses on the external business and economic environment, the implications of changes in economic environment to the company’s strategy and execution, and forecasting for housing activity, demographics, overall economic activity, and mortgage market activity.

Prior to joining Fannie Mae, Duncan was Senior Vice President and Chief Economist at the Mortgage Bankers Association. His experience also includes service as a LEGIS Fellow and staff member with the Committee on Banking, Finance, and Urban Affairs for Congressman Bill McCollum in the U.S. House of Representatives, and work on the Financial Institutions Project at the U.S. Department of Agriculture.

Duncan received his Ph. D. in Agricultural Economics from Texas A&M University and his B.S. and M.S. in Agricultural Economics from North Dakota State University.

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