Spring for Housing?
The What and Where of Home Building

North American Insulation Manufacturers Association
May 21, 2019

Robert Dietz, Ph.D.
NAHB Chief Economist
Fed Funds Rate

Source: U.S. Board of Governors of the Federal Reserve System (FRB)
NAHB FedCast

1. Steady fed funds rate at a top rate of 2.5%
2. A more dovish stance for 2019
3. No rate increases in 2019 and a single rate hike in 2020
4. Slowing of sales of Treasury bond holdings, ongoing drawdown of MBS
Some increases ahead but nearing peak rates for the cycle

Source: Federal Reserve and Freddie Mac data and NAHB forecast
Existing Single-Family Home Sales

Source: National Association of Realtors (NAR) and NAHB forecast
New Home Sales and Months’ Supply

Source: U.S. Census Bureau (BOC)
Single-Family Starts vs Existing Home Sales (1972-present)

43% of these “good” data are post-Great Recession

21% occurrence in green

$SF \text{starts} = 2E-05(EHS)^2 + 0.3286(EHS) - 29.518$

$R^2 = 0.5541$

Source: NAHB econometric analysis of Census Housing Starts and NAR EHS data
GDP Growth

Economy is slowing

Source: U.S. Bureau of Economic Analysis (BEA) and NAHB forecast

<table>
<thead>
<tr>
<th>Year</th>
<th>Q/Q Percent Change, SAAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>-8%</td>
</tr>
<tr>
<td>2001</td>
<td>-10%</td>
</tr>
<tr>
<td>2002</td>
<td>-6%</td>
</tr>
<tr>
<td>2003</td>
<td>-4%</td>
</tr>
<tr>
<td>2004</td>
<td>-2%</td>
</tr>
<tr>
<td>2005</td>
<td>0%</td>
</tr>
<tr>
<td>2006</td>
<td>2%</td>
</tr>
<tr>
<td>2007</td>
<td>4%</td>
</tr>
<tr>
<td>2008</td>
<td>6%</td>
</tr>
<tr>
<td>2009</td>
<td>8%</td>
</tr>
<tr>
<td>2010</td>
<td>10%</td>
</tr>
</tbody>
</table>

Annual Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT avg ('58-'07)</td>
<td>3.4%</td>
</tr>
<tr>
<td>2017</td>
<td>2.2%</td>
</tr>
<tr>
<td>2018</td>
<td>2.9%</td>
</tr>
<tr>
<td>2019f</td>
<td>2.3%</td>
</tr>
<tr>
<td>2020f</td>
<td>1.8%</td>
</tr>
<tr>
<td>2021f</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Economic Analysis (BEA) and NAHB forecast
Expansion is Aging

Current expansion is 120 months old

Trough to Peak, Months

Source: National Bureau of Economic Research (NBER)
Housing Demand and Affordability
Household Formation

Demand for home ownership strengthening: 1Q19 a recent exception

Y/Y Change in Household Count, Thousands, NSA

Source: U.S. Census Bureau (BOC): Housing Vacancies & Homeownership
Homeownership Rate

The first time drop in 2019 Q1 after ten quarters of growth

Source: U.S. Census Bureau (BOC): Housing Vacancies & Homeownership
Share of Young Adults Living with Parents

Almost doubled

Housing Affordability – NAHB/Wells Fargo HOI

Source: NAHB/Wells Fargo Housing Opportunity Index (HOI)
Coastal markets least affordable

Source: NAHB/Wells Fargo Housing Opportunity Index (HOI)
Construction Outlook
Labor shortage continued through 2018

The number of open construction positions = 360,000 in March 2019

Source: U.S. Bureau of Labor Statistics (BLS)
Cumulative Change in Employment by Age Group

Mind the Gen-X gap

Source: U.S. Bureau of Labor Statistics (BLS)
Construction Sector Productivity

Lagging overall economy

Index, 1993 = 1

Source: U.S. Bureau of Labor Statistics (BLS)
Building Materials – Lumber Prices

Since January 2018, lumber prices decreased 19%; 63% at peak

Source: NAHB Analysis; Random Lengths Composite Index
Regulatory Costs Rising – Up 29% Over 2011-2016

Total effect of building codes, land use, environmental and other rules

Regulatory Costs as a Share of Home Price

Lower Quartile: 14.0%*
  - During Construction: 4.0%
  - During Development: 7.9%

Average: 24.3%
  - During Construction: 9.7%
  - During Development: 14.6%

Upper Quartile: 30.3%*
  - During Construction: 12.7%
  - During Development: 18.8%

* For quartiles, construction and development costs do not sum to the total.
Source: NAHB/Wells Fargo HMI survey, assumptions described in the Appendix.
Single-Family Starts
Limited growth as economy slows

Source: U.S. Census Bureau (BOC) and NAHB forecast
Growth in Single-Family Permits

December 2018 YTD vs. December 2017 YTD

Rank
- No Change
- Decline
- Growth rate < U.S.
- Growth rate ≥ U.S. (4.3%)

Source: U.S. Census Bureau (BOC)
Home Prices of New and Existing Homes

Gap narrowed as median new home sale prices fell

Source: U.S. Census Bureau (BOC) and National Association of Realtors (NAR)
Typical New Home Size

Decline after market shift

Source: U.S. Census Bureau (BOC)
Townhouse Market Expanding

Thousands, NSA

SF Starts: Attached
Townhouse Share: 1-Year Moving Average

Source: U.S. Census Bureau (BOC)
Custom Home Building Market

Flat market conditions

Thousands, NSA

Source: U.S. Census Bureau (BOC)
# Multifamily Housing Starts

## Leveling off

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
<th>% Change</th>
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<tbody>
<tr>
<td>2016</td>
<td>393,000</td>
<td>0%</td>
</tr>
<tr>
<td>2017</td>
<td>356,000</td>
<td>-9%</td>
</tr>
<tr>
<td>2018</td>
<td>374,000</td>
<td>5%</td>
</tr>
<tr>
<td>2019'</td>
<td>373,000</td>
<td>0%</td>
</tr>
<tr>
<td>2020'</td>
<td>384,000</td>
<td>3%</td>
</tr>
<tr>
<td>2021'</td>
<td>399,000</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (BOC) and NAHB forecast

## Graph

- **Avg** = 344,000
- **Trough to Current:**
  - 4th Q 09 = 82,000
  - 4th Q 18 = 357,000
  - +335%

76% fall

Source: U.S. Census Bureau (BOC) and NAHB forecast
Residential Remodeling

Growth ahead but softening

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<th>Year</th>
<th>Percent Change</th>
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<td>2017</td>
<td>19%</td>
</tr>
<tr>
<td>2018</td>
<td>8%</td>
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<tr>
<td>2019</td>
<td>3%</td>
</tr>
<tr>
<td>2020</td>
<td>2%</td>
</tr>
<tr>
<td>2021</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (BOC) and NAHB forecast
Home Building Geography Index
New NAHB Home Building Geography Index

9% of single-family construction takes place in Large Metro – Outlying County

Q1 2019
YOY growth rate: 1.6%
4-quarter MA: 5.6%

Source: NAHB Analysis of Census data (Building Permits and ACS)
New NAHB Home Building Geography Index

29% of single-family construction takes place in Smaller Metro – Core County

Q1 2019
YOY growth rate: -6.2%
4-quarter MA: 3.2%

Source: NAHB Analysis of Census data (Building Permits and ACS)
New NAHB Home Building Geography Index

3% of single-family construction takes place in Non Metro/Micro County

Q1 2019
YOY growth rate: -3.9%
4-quarter MA: 3.0%

Source: NAHB Analysis of Census data (Building Permits and ACS)
New NAHB Home Building Geography Index

6% of single-family construction takes place in Micro County

Q1 2019
YOY growth rate: -11.4%
4-quarter MA: 0.5%

Source: NAHB Analysis of Census data (Building Permits and ACS)
New NAHB Home Building Geography Index

8% of single-family construction takes place in Smaller Metro – Outlying County

Q1 2019
YOY growth rate: -4.8%
4-quarter MA: 0.0%

Source: NAHB Analysis of Census data (Building Permits and ACS)
New NAHB Home Building Geography Index

18% of single-family construction takes place in Large Metro – Core County

Source: NAHB Analysis of Census data (Building Permits and ACS)
New NAHB Home Building Geography Index

27% of single-family construction takes place in Large Metro – Suburban County

Q1 2019
YOY growth rate: -9.7%
4-quarter MA: -0.7%

Source: NAHB Analysis of Census data (Building Permits and ACS)
# New NAHB Home Building Geography Index (HBGI)

<table>
<thead>
<tr>
<th></th>
<th>Multifamily</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Market Share</td>
<td>YOY Growth Rate</td>
<td>YOY Growth Rate</td>
</tr>
<tr>
<td></td>
<td>(4-Quarter MA)</td>
<td>(Q1 2019)</td>
<td>(4-Quarter MA)</td>
</tr>
<tr>
<td>Large Metro - Core County</td>
<td>40%</td>
<td>3.2%</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Large Metro - Suburban County</td>
<td>26%</td>
<td>-8.8%</td>
<td>-4.4%</td>
</tr>
<tr>
<td>Large Metro - Outlying County</td>
<td>4%</td>
<td>-5.8%</td>
<td>40.1%</td>
</tr>
<tr>
<td>Smaller Metro - Core County</td>
<td>21%</td>
<td>3.5%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Smaller Metro - Outlying County</td>
<td>3%</td>
<td>-1.5%</td>
<td>37.9%</td>
</tr>
<tr>
<td>Micro County</td>
<td>4%</td>
<td>-14.8%</td>
<td>28.9%</td>
</tr>
<tr>
<td>Non Metro/Micro County</td>
<td>2%</td>
<td>1.5%</td>
<td>70.6%</td>
</tr>
</tbody>
</table>

Source: NAHB Analysis of Census Data (Building Permits and ACS)
Thank you

Questions?
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@dietz_econ