Economic Crosswinds in 2020

Multifamily Council Board of Trustee Meeting
January 19, 2020

Danushka Nanayakkara,
NAHB AVP, Forecasting and Analysis
GDP Growth

Economy is slowing after strong 1Q19

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

<table>
<thead>
<tr>
<th>Year</th>
<th>GPD Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2.4%</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>1.6%</td>
</tr>
</tbody>
</table>

Annual Growth

LT avg ('58-'07) 3.4%

Source: U.S. Bureau of Economic Analysis (BEA) and NAHB forecast
US payroll employment contracted to 94% of its pre-recession peak. It has rebounded to 110% of the peak.

Fed Funds Rate
Fed on pause after three rate cuts in 2019

Source: U.S. Board of Governors of the Federal Reserve System (FRB).
Interest rates slowly rising as recession risks decline and trade deals are debated

Source: Federal Reserve and Freddie Mac data and NAHB forecast.

30-Year Fixed Rate Mortgage and 10-Year Treasury

October 31, 2016

Source: Federal Reserve and Freddie Mac data and NAHB forecast.
Housing Demand and Affordability
Consumer Debt

Rise in student and auto loans

Source: Federal Reserve Bank of New York
Household Formation

Y/Y Change in Household Count, Thousands, NSA

Avg: 1.3 million
(12% renters)

Avg: 1.1 million
(77% renters)

Avg: 0.6 million
(131% renters)

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

Almost doubled

Household Formation

Strong demand for home ownership in Q3 2019

Y/Y Change in Household Count, Thousands, NSA

Owner-Occupied

Renter-Occupied

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

Bounced back after two declines

Source: U.S. Census Bureau (BOC): Housing Vacancies & Homeownership
Lifetime Homeownership Rates – New NAHB Research

A reminder that most households need access to rental and for-sale housing

Share Who Have Never Owned a Home
9.5%

Lifetime Homeownership Rate
90.5%

Source: The National Longitudinal Survey of Youth and NAHB Analysis.
Rising Population Entering Housing Demand Years: 2020

Gen X the majority of new construction home buyers

Only 40% of young adults ages 25 to 34 head their own household in 2017.


Silent Generation: Born 1928-1945

Source: U.S. Census Bureau (BOC).
Here Comes Gen Z: Born 1998 to 2013

A smaller, more traditional generation?

<table>
<thead>
<tr>
<th></th>
<th>Gen Z</th>
<th>Millennials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making money</td>
<td>70%</td>
<td>60%</td>
</tr>
<tr>
<td>Having a successful career</td>
<td>69%</td>
<td>59%</td>
</tr>
<tr>
<td>Having time to pursue hobbies</td>
<td>61%</td>
<td>59%</td>
</tr>
<tr>
<td>Having a family</td>
<td>58%</td>
<td>60%</td>
</tr>
<tr>
<td>Having close friends</td>
<td>55%</td>
<td>55%</td>
</tr>
<tr>
<td>Owning a car</td>
<td>55%</td>
<td>56%</td>
</tr>
<tr>
<td>Buying a home</td>
<td>51%</td>
<td>53%</td>
</tr>
<tr>
<td>Being in a romantic relationship</td>
<td>46%</td>
<td>43%</td>
</tr>
<tr>
<td>Getting married</td>
<td>39%</td>
<td>39%</td>
</tr>
<tr>
<td>Traveling</td>
<td>37%</td>
<td>39%</td>
</tr>
<tr>
<td>Being famous</td>
<td>7%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Source: Morning Consult, Understanding Gen Z
In November, median rent was slightly higher than a year ago.

Source: Zillow, Inc: Zillow Real Estate Metrics
Growing Challenge of Rent Control

- Rent control and rent stabilization laws lead to a reduction in the available supply of rental housing in a community.
- Rent control policies generally lead to higher rents in the uncontrolled market.
- Rent control and rent stabilization policies do a poor job at targeting benefits.
- Rent control can cause renters to continue to live in units that are too small, too large or not in the right locations to best meet their housing needs.
- There are significant fiscal costs associated with implementing a rent control program.
- Rent-controlled buildings can potentially suffer from deterioration or lack of investment.
- Rent control policies can hold rents of controlled units at lower levels but not under all circumstances.

Source: Lisa Sturtevant, Ph.D.
Supply-Side Headwinds
Top 10 Significant Problems Faced in 2019 and Expect to Face in 2020

- Cost/availability of labor: 87% (Faced in 2019), 85% (Expect to face in 2020)
- Building material prices: 66% (Faced in 2019), 66% (Expect to face in 2020)
- Cost/availability of developed lots: 63% (Faced in 2019), 66% (Expect to face in 2020)
- Impact/hook-up/inspection or other fees: 58% (Faced in 2019), 60% (Expect to face in 2020)
- Gridlock/uncertainty in Washington making buyers cautious: 45% (Faced in 2019), 56% (Expect to face in 2020)
- Development standards (parking, setbacks, etc.): 47% (Faced in 2019), 50% (Expect to face in 2020)
- Difficulty obtaining zoning/permit approval: 47% (Faced in 2019), 48% (Expect to face in 2020)
- Local/state environmental regulations and policies: 40% (Faced in 2019), 45% (Expect to face in 2020)
- Negative media reports making buyers cautious: 39% (Faced in 2019), 44% (Expect to face in 2020)
- Inaccurate appraisals: 41% (Faced in 2019), 40% (Expect to face in 2020)
Skilled labor shortage persists

The number of open construction positions = 311,000 in October 2019

Construction Sector Productivity

Lagging overall economy

Index, 1993 = 1

Construction Worker Productivity

Overall Worker Productivity

Source: U.S. Bureau of Labor Statistics (BLS)
Types of Construction Technology Used in 2019

<table>
<thead>
<tr>
<th>Technology</th>
<th>Single-family Builders</th>
<th>Residential Remodelers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof trusses</td>
<td>75%</td>
<td>60%</td>
</tr>
<tr>
<td>Floor trusses</td>
<td>71%</td>
<td>55%</td>
</tr>
<tr>
<td>Prefabricated wall panels</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Dust-free concrete and masonry tools</td>
<td>9%</td>
<td>18%</td>
</tr>
<tr>
<td>Other prefabricated components</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>Geo-fencing</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td>Prefabricated floor panels</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Remote controlled sitework machinery</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Automatic drywall tapers</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>3D printed concrete forms</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Other 3D printed components</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Digital tilt sensors</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Wearable construction worker monitors</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Automated brick laying machines</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Other on-site robots</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>None of the above</td>
<td>13%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: NAHB/Wells Fargo Housing Market Index (HMI) and NAHB Remodeling Market Index (RMI)
Moderate Building Material Price Growth in 2019

Year-to-Date Change (January – November)

Source: NAHB Analysis; U.S. Bureau of Labor Statistics (BLS)
# Regulations - 32% of Multifamily Development Costs

**NAHB-NMHC research**

### Government Regulations as a Share of Multifamily Development Costs

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Lower Quartile</th>
<th>Average</th>
<th>Upper Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost increases from changes to building codes over the past 10 years</td>
<td>5.2%</td>
<td>4.0%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Development requirements that go beyond the ordinary</td>
<td>3.9%</td>
<td>7.0%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Fees charged when building construction is authorized</td>
<td>2.3%</td>
<td>5.9%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Cost of applying for zoning approval</td>
<td>4.2%</td>
<td>3.9%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Other (non-refundable) fees charged when site work begins</td>
<td>4.8%</td>
<td>4.2%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Cost of complying with OSHA requirements</td>
<td>2.3%</td>
<td>5.9%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Others</td>
<td>7.3%</td>
<td>7.1%</td>
<td>42.6%*</td>
</tr>
</tbody>
</table>

*Note: For quartiles, all types of costs do not sum to the total.*

Source: NAHB/Wells Fargo HMI survey
Construction Outlook
Confidence in the multifamily market weakened

Source: U.S. Census Bureau (BOC) and NAHB Multifamily Market Survey (MMS).

NAHB Multifamily Production Index

Thousands of units, SAAR

Index

Source: U.S. Census Bureau (BOC) and NAHB Multifamily Market Survey (MMS).
Multifamily Housing Starts

Apartment construction has leveled off since 2015

December 2018, 328,000 SAAR

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

Apartment construction increased slightly due to single-family slowdown

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

Leveling off

Thousands of units, SAAR

Avg=344,000

Trough to Current:
4th Q 09 = 82,000
3rd Q 19 = 388,000
+373%

76% fall

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>392,000</td>
<td>-1%</td>
</tr>
<tr>
<td>2017</td>
<td>357,000</td>
<td>-9%</td>
</tr>
<tr>
<td>2018</td>
<td>377,000</td>
<td>6%</td>
</tr>
<tr>
<td>2019f</td>
<td>381,000</td>
<td>1%</td>
</tr>
<tr>
<td>2020f</td>
<td>383,000</td>
<td>1%</td>
</tr>
<tr>
<td>2021f</td>
<td>399,000</td>
<td>4%</td>
</tr>
</tbody>
</table>

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

YoY Growth in Multifamily Permits: Oct 2019 (Units # YTD, NSA)

Source: U.S. Census Bureau (BOC)
Multifamily Housing Starts – Trough and Current

National average multifamily starts bottomed out at 24% in late 2009 and were 116% of normal in 2019Q3.

Source: U.S. Census Bureau (BOC)
Multifamily Construction

Rental production dominates

Source: U.S. Census Bureau (BOC).
Multifamily Buildings Completed By Units

More concentration in 50+ unit properties

Source: U.S. Census Bureau (BOC).
NAHB 55+ Multifamily Rental Production Expected

Senior market slowing?

Index, seasonally adjusted

Source: NAHB 55+ Housing Market Index Survey
Single-Family Built-for-Rent a Niche Market

Thousands, NSA

<table>
<thead>
<tr>
<th>Year</th>
<th>Share of Single-Family Built for Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.78%</td>
</tr>
<tr>
<td>2016</td>
<td>4.35%</td>
</tr>
<tr>
<td>2017</td>
<td>4.36%</td>
</tr>
<tr>
<td>2018</td>
<td>4.91%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (BOC).
Single-Family Built-for-Rent Geography

Source: NAHB analysis of U.S. Census Bureau (BOC) data
More on Geography of Rental Housing

Figure 1: Detached Renter Occupied Units As Share of Total Renter Occupied Units by Metro Area (2017 1 Year ACS)

Figure 2: Attached Renter Occupied Units As Share of Total Renter Occupied Units by Metro Area (2017 1 Year ACS)

Source: NAHB analysis of the 2017 American community Survey (ACS)
New NAHB Home Building Geography Index

79.9% of multifamily construction takes place in Millennial Counties

Q3 2019
4-quarter MA of YOY growth rate: 6.5%
Q3 YOY growth rate: 25.5%

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

Questions?

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