Rising Recession Concerns?

HBA of Northern Colorado
October 9th, 2019

Robert Dietz, Ph.D.
NAHB Chief Economist
### Population Growth

*Fort Collins MSA population growing faster than national and statewide rates*

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S.</strong></td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td><strong>Colorado</strong></td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.4%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.9%</td>
<td>1.6%</td>
<td>1.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Fort Collins MSA</strong></td>
<td>1.3%</td>
<td>1.6%</td>
<td>1.8%</td>
<td>1.7%</td>
<td>2.5%</td>
<td>2.9%</td>
<td>1.7%</td>
<td>1.5%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

Population Growth: *Fort Collins MSA population growing faster than national and statewide rates.*

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Colorado</th>
<th>Fort Collins, CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>309,326</td>
<td>5,048</td>
<td>300</td>
</tr>
<tr>
<td>2011</td>
<td>311,580</td>
<td>5,122</td>
<td>305</td>
</tr>
<tr>
<td>2012</td>
<td>313,874</td>
<td>5,194</td>
<td>311</td>
</tr>
<tr>
<td>2013</td>
<td>316,058</td>
<td>5,270</td>
<td>316</td>
</tr>
<tr>
<td>2014</td>
<td>318,386</td>
<td>5,351</td>
<td>324</td>
</tr>
<tr>
<td>2015</td>
<td>320,743</td>
<td>5,452</td>
<td>333</td>
</tr>
<tr>
<td>2016</td>
<td>323,071</td>
<td>5,541</td>
<td>339</td>
</tr>
<tr>
<td>2017</td>
<td>325,147</td>
<td>5,616</td>
<td>344</td>
</tr>
<tr>
<td>2018</td>
<td>327,167</td>
<td>5,696</td>
<td>351</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (BOC)
Population Growth
Weld County growing faster

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>Weld</td>
<td>1.5%</td>
<td>1.8%</td>
<td>2.0%</td>
<td>2.3%</td>
<td>2.2%</td>
<td>3.3%</td>
<td>3.5%</td>
<td>3.5%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Larimer</td>
<td>1.3%</td>
<td>1.6%</td>
<td>1.8%</td>
<td>1.7%</td>
<td>2.5%</td>
<td>2.9%</td>
<td>1.7%</td>
<td>1.5%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (BOC)
Payroll Employment
Fort Collins MSA above the pre-recession peak

Thousands, SA

Fort Collins MSA

Colorado

Source: U.S. Bureau of Labor Statistics (BLS)
Existing House Price Index

Fort Collins MSA above the pre-recession peak

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>Fort Collins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recession-era Low</td>
<td>81%</td>
<td>95%</td>
</tr>
<tr>
<td>Current</td>
<td>117%</td>
<td>172%</td>
</tr>
</tbody>
</table>

2000Q1 = 100, SA

Source: U.S. Federal Housing Finance Agency (FHFA)
Fort Collins MSA GDP Growth

Y/Y Percent Change

Source: U.S. Bureau of Economic Analysis (BEA)
GDP Growth

Economy is slowing after strong 1Q19

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

Annual Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT avg ('58-'07)</td>
<td>3.4%</td>
</tr>
<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>1.9%</td>
</tr>
<tr>
<td>2021f</td>
<td>1.5%</td>
</tr>
</tbody>
</table>
Expansion is Aging

Current expansion is 125 months old

Trough to Peak, Months

Source: National Bureau of Economic Research (NBER)
Tight Labor Market

Lack of labor represents a macro risk

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

Mind the Gen-X gap

Source: U.S. Bureau of Labor Statistics (BLS)
Fed Funds Rate

Source: U.S. Board of Governors of the Federal Reserve System (FRB)
The Easiest Game of Clue .... Ever

Who Killed the Expansion?

“Expansions don’t die of old age. They are murdered.”

Ben Bernanke
The Easiest Game of Clue .... Ever

Who Killed the Expansion?

The Suspects

Professor Plumb  Miss Scarlett  Mr. Powell
The Easiest Game of Clue .... Ever

Who Killed the Expansion?

The Weapons

Candlestick

Lead Pipe

Monetary Policy

Figure 1: Expansionary monetary policy.
The Easiest Game of Clue .... Ever

Who Killed the Expansion?

The Room

The Study

The Lounge

The Boardroom
Current top fed funds rate of 2%

A more dovish stance for 2019 and 2020

One more cut during the remainder of 2019

End of quantitative tightening
Interest rate declines amidst trade concerns and economic slowing

Source: Federal Reserve and Freddie Mac data and NAHB forecast
10-Year Treasury Yield by Country

Source: www.investing.com; 10-year treasury rate on September 30, 2019
Housing Demand and Affordability
Consumer Confidence Leveling Off

Near two-decade high but economic uncertainty took a toll at end of year

Index 1985=100, SA

Source: The Conference Board
Household Balance Sheets

A shift in debt away from mortgages

% of Disposable Inc., SA

Source: U.S. Board of Governors of the Federal Reserve System (FRB)
Consumer Debt

Rise in student and auto loans

Source: Federal Reserve Bank of New York
Share of Young Adults Living with Parents

Almost doubled

Household Formation

Two quarters of relative decline in the owner-occupied sector

Y/Y Change in Household Count, Thousands, NSA

Owner-Occupied

Renter-Occupied

Source: U.S. Census Bureau (BOC): Housing Vacancies & Homeownership
The second drop after ten quarters of growth

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

Homeownership rate for Larimer was 64.8% and 72% for Weld county

Homeownership Rates in the U.S. by County

Source: 2013-2017 American Community Survey 5-Year Estimates
Housing Affordability – NAHB/Wells Fargo HOI

The second drop after ten quarters of growth

Source: NAHB/Wells Fargo Housing Opportunity Index (HOI)
Wide variation. Local – Larimer average price is $307,000; Weld is $245,000

Source: NAHB/Wells Fargo Housing Opportunity Index (HOI)
Supply-Side Factors
Building Materials – Lumber Prices

Lumber prices rose 63% to a peak from January 2017; dropped 16% since January 2018

Source: NAHB Analysis; Random Lengths Composite Index
The number of open construction positions = 373,000 in July 2019

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)
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.
Construction Outlook
Builder confidence is trending higher as interest rates move lower.

Source: Census Bureau and NAHB/Wells Fargo HMI survey
Single-Family Starts
Limited growth as economy slows

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>785,000</td>
<td>10%</td>
</tr>
<tr>
<td>2017</td>
<td>852,000</td>
<td>9%</td>
</tr>
<tr>
<td>2018</td>
<td>873,000</td>
<td>2%</td>
</tr>
<tr>
<td>2019¹</td>
<td>854,000</td>
<td>-2%</td>
</tr>
<tr>
<td>2020¹</td>
<td>873,000</td>
<td>2%</td>
</tr>
<tr>
<td>2021¹</td>
<td>893,000</td>
<td>2%</td>
</tr>
</tbody>
</table>

Thousands of units, SAAR

Trough to Current:
Mar 09 = 353,000
Aug 19 = 919,000
+160%

80% fall

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

YoY Growth in Single-Family Permits: June 2019 (Units # YTD, NSA)

Source: U.S. Census Bureau (BOC)
Single-Family Building Permits – CO and Fort Collins MSA

Number of Units

Colorado

Fort Collins MSA

Ft Collins MSA down 4.2% thus far in 2019: 941 vs 982

Weld County: 3194 in 2018
2,777 in 2017 (15% ‘18 growth)

Source: U.S. Census Bureau (BOC)
Typical New Home Size

Decline after market shift

Square Feet

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

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

10% of single-family construction takes place in Manufacturing Counties

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

8.7% of single-family construction takes place in Large Metro – Outlying County

Q2 2019
4-quarter MA of YOY growth rate: 0.3%
YOY growth rate: -8.3%

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

28.6% of single-family construction takes place in Smaller Metro – Core County

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

26.7% of single-family construction takes place in Large Metro – Suburban County

Q2 2019
4-quarter MA of YOY growth rate: -3.4%
YOY growth rate: -7.9%

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>
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<tbody>
<tr>
<td></td>
<td>Market Share</td>
<td>YOY Growth Rate</td>
<td>Q2 2019</td>
<td>(4-Quarter MA)</td>
</tr>
<tr>
<td></td>
<td>(4-Quarter MA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Metro - Core County</td>
<td>41%</td>
<td>-0.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Metro - Suburban County</td>
<td>26%</td>
<td>-12.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Metro - Outlying County</td>
<td>4%</td>
<td>-17.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smaller Metro - Core County</td>
<td>22%</td>
<td>28.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smaller Metro - Outlying County</td>
<td>3%</td>
<td>20.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro County</td>
<td>3%</td>
<td>30.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Metro/Micro County</td>
<td>1%</td>
<td>62.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NAHB Analysis of Census Data (Building Permits and ACS)
Multifamily Housing Starts

Leveling off

Thousands of units, SAAR

Avg=344,000

76% fall

Trough to Current:

4th Q 09 = 82,000
2nd Q 19 = 411,000
+402%

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<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>2019'</td>
<td>381,000</td>
<td>1%</td>
</tr>
<tr>
<td>2020'</td>
<td>385,000</td>
<td>1%</td>
</tr>
<tr>
<td>2021'</td>
<td>399,000</td>
<td>4%</td>
</tr>
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</table>

Source: U.S. Census Bureau (BOC) and NAHB forecast
Multifamily Building Permits – CO and Fort Collins MSA

Number of Units

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

Remodeling market slowing

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<td>20%</td>
</tr>
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<tr>
<td>2019</td>
<td>-4%</td>
</tr>
<tr>
<td>2020</td>
<td>4%</td>
</tr>
<tr>
<td>2021</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (BOC) and NAHB forecast
Rising Population Entering Housing Demand Years

Headship rates increase from 15% to 45%

- **Gen Z**: Born After 1997
- **Millennials**: Born 1981-1997
- **Gen X**: Born 1965-1980
- **Baby Boomers**: Born 1946-1964
- **Silent Generation**: Born 1928-1945
- **Greatest Generation**: Born Before 1928

Source: U.S. Census Bureau (BOC)
Thank you

Questions?
rdietz@nahb.org
@dietz_econ

eyeonhousing.org
housingeconomics.com