Multi and Single Family Housing: Connected more than you think

NMHC Conference
Boston, May 15, 2013
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Consultant, CBRE Econometric Advisors
### Occupancy by Structure Type and Tenure

<table>
<thead>
<tr>
<th></th>
<th>Owner</th>
<th>Renter</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>66,752</td>
<td>13,753</td>
<td>80,505</td>
</tr>
<tr>
<td>Multi Family</td>
<td>3,662</td>
<td>23,550</td>
<td>27,213</td>
</tr>
<tr>
<td>Total</td>
<td>70,414</td>
<td>37,303</td>
<td>107,718</td>
</tr>
</tbody>
</table>

95% of owner housing is Single-Family
87% of Multi-Family structures are rented
But: 38% of rental market is Single-Family Structures!
Demand Myths: Why we think rents and prices should move negatively

- Certain Households own, certain others rent. Demographics dictates tenure/structure choice and hence prices versus rents: *Not over time*.
- In good times people want to own and leave renting, in bad times the reverse. *But home ownership does not have a strong cyclic pattern!*
- Homeownership changes drive Prices/Rents. *But Price/Rents also determine homeownership, affordability is complicated.*
- Credit rationing/underwriting standards are the one shock that generates price-rent imbalances. *The GSE effectively controlled underwriting – until 2001-2006.*
Homeownership Rate and Renter Households

- Homeownership Rate, %
- Renter Households, Mil.

Source: Bureau of the Census.
In cross-section data, Choice of Tenure seems totally determined by income, age, and ...

<table>
<thead>
<tr>
<th>Age of Head of Household</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50+</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>21.7%</td>
<td>37.3%</td>
<td>53.4%</td>
<td>58.9%</td>
<td>68.5%</td>
</tr>
<tr>
<td>35-44</td>
<td>36.6</td>
<td>55.2</td>
<td>68.3</td>
<td>77.6</td>
<td>85.4</td>
</tr>
<tr>
<td>45-64</td>
<td>59.4</td>
<td>73.1</td>
<td>81.5</td>
<td>85.6</td>
<td>90.5</td>
</tr>
<tr>
<td>65+</td>
<td>67.5</td>
<td>84.9</td>
<td>87.6</td>
<td>89.6</td>
<td>91.7</td>
</tr>
<tr>
<td>All Ages</td>
<td>48.3</td>
<td>58.3</td>
<td>68.0</td>
<td>74.9</td>
<td>84.3</td>
</tr>
</tbody>
</table>

adapted from DiPasquale and Wheaton (1996)
Household Structure

Singles: 56% are renters. Married: 22% rent

More singles = more renters?

Source: Torto Wheaton Research
Over time, Ownership not involved these demographics: it's been all about access to credit and Prices/Rents.

Scenarios: (+): mortgage mod. (-): Strategic Defaults

US homeownership rate, %

Forecast

Actual vs. age-expected
Why Tenure demand could be more complicated than just demographics

1). How many owners become temporary renters due to adverse personal economic shocks? Or while moving between states (they never own “2” homes).

3). Renting entails risk to income (consumption) as rents fluctuate. Why are there no long term rental contracts (Holland, Switzerland….). “Elder Leases”

4). Owning entails no risk to consumption with FRM but risk to asset value when you sell. Asset risk is large relative to a year or two’s rent risk.

5). If you are going to move soon asset risk>rent risk. If your residence term is long, rent risk can add up while asset risk occurs only far into the future.
‘Affordability” and Tenure choice: prices/rents and available credit

1). Economists’ cost of owning is: Price x interest rate – likely future appreciation. Saving with your house. Cost of owning <> annual rent?

2). Formula only works when there are no down payment constraints. *Hah!*

3). In the Great Housing Bubble, down payment constraint eliminated through: 2\textsuperscript{nd} mortgages, subprime mortgages (primary LTV>1). Purchases with “little or no skin in the ownership game”.

4). Credit during the bubble granted to people previously ineligible due to poor credit, uncertain income.

    = rising Home ownership
Mortgage Delinquency leveling off: transition to foreclosure dropping (All Loans)

Source: Mortgage Bankers Association
Homeownership Rates still Decline: by Region

Change in homeownership rate, basis points

Sources: Bureau of the Census, CBRE Econometric Advisors.
So Why isn’t everyone buying?
Credit rationing must be back

Price/Rent and Payment/Rent

30-year fixed rate, %


Price/Rent ratio
Payment/Rent ratio
Mortgage rate
Housing Affordability Near-Record High...everywhere

Housing affordability index

Source: Moody’s Economy.com

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Historically Rents and Prices move together:
Except during the Great Housing Bubble

(Back in sync now)
Multi Single-Family Linkages: Supply

• Virtually all new Single Family housing is built for ownership.
• Between 70% and 90% of multifamily construction is for built rental occupancy.
• Historically single family construction exceeds owner household growth.
• Historically multi-family construction is less than renter household growth.
• All of this is possible because of steady flow unit conversions.
• The main type of unit converted is older single family.
• “Filtering” single family units constitute an enormous source of net rental supply. A “buffer” for changes in ownership.
Unit conversions are *the* main source of recent supply for all rental housing.

The chart shows the year-over-year change in rental stock, millions of units, from 1997 to 2012. Key elements of the chart include:

- **Completions** (green bars)
- **Demolitions** (red bars)
- **Conversions** (gray bars)
- **Total** (black line)

The chart indicates fluctuations in completions, demolitions, and conversions over the years, with the total line reflecting the aggregate change in rental stock.
And over the long term?

Tenure Conversions = apartment Construction!

Units, Mil.

-1.0
-0.5
0.0
0.5
1.0
1.5
2.0

-1.0
-0.5
0.0
0.5
1.0
1.5
2.0


- conversions
- 1-unit starts
- 5+ units starts
What of the Future? Can we statistically identify what drives conversions?

1975=100 constant $
Conversion “Model”

1). Conversions (to rent) are negatively impacted directly by changes in homeownership
2). Conversions (to rent) negatively impacted by rising house prices
3). Positively impacted by rising rents.
4). Positively impacted by higher mortgage rates

**Forecast: significantly reduced conversion flows**

- Linear Regression - Estimation by Least Squares
- Quarterly Data From 1976:01 To 2012:01
- Centered R^2                        0.6626061
- Variable                        Coeff   Std Error   T-Stat   Signif
  1. Constant                      0.159199969  0.169902139      0.93701  0.35041449
  2. DHO                          -0.017281031  0.001421769    -12.15460  0.00000000
  3. DRHPI                        -0.021679129  0.017131079     -1.26549  0.20786119
  4. DRRENT2                      0.121690715  0.035888486      3.39080  0.00091256
  5. MRTG                         0.067408139  0.018015685      3.74164  0.00026873
But: New Multi Supply Shows a strong recovery

U.S. multi-housing with 5+ units in structure, thousands

Source: CBRE Econometric Advisors, Q1 2013.

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Upward Revisions to 2012 Permits and Starts

Sources: Bureau of the Census, CBRE Econometric Advisors.

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“Supply-Constrained”? Not Now…

Ratio of 5+ units underway to 1989-2008 average

Source: CBRE EA-Dodge Pipeline, March 2013.

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Hence Vacancy is Likely to Rise Through 2014

Source: MPF/CBRE EA Multi-Housing Outlook, Q1 2013.

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Vacancy Rates Relative to Year Ago: construction!

Year-over-year change in vacancy rate, basis points

Source: CBRE Econometric Advisors, Q1 2013.
Primary Markets Leading a Slow-Down in rent growth

Same-Store Rent Growth, %

<table>
<thead>
<tr>
<th>City</th>
<th>12q4/11q4</th>
<th>13q1/12q4 annualized</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>9.2</td>
<td>6.6</td>
</tr>
<tr>
<td>San Jose</td>
<td>8.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Boston</td>
<td>6.4</td>
<td>4.8</td>
</tr>
<tr>
<td>New York</td>
<td>5.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Houston</td>
<td>5.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Chicago</td>
<td>4.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Seattle</td>
<td>5.3</td>
<td>3.7</td>
</tr>
<tr>
<td>Dallas</td>
<td>4.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Detroit</td>
<td>3.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Average</td>
<td>5.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>4.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Miami</td>
<td>3.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Baltimore</td>
<td>4.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>3.7</td>
<td>2.5</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>3.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>3.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Atlanta</td>
<td>3.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Phoenix</td>
<td>3.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: CBRE Econometric Advisors, Q1 2013.
Home Prices Begin a serious Recover…

% Change in Case-Shiller Home Price Index

-15 -10 -5 0 5 10 15 20 25

Phoenix
San Francisco
Las Vegas
Detroit
Atlanta
Minneapolis
Los Angeles
Miami
San Diego
Denver
Tampa
Seattle
Portland
CS-20
Dallas
Charlotte
Washington DC
Cleveland
Boston
Chicago
New York

Source: S&P/Case-Shiller.

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## Evaluating the Potential for Home Prices Increases

<table>
<thead>
<tr>
<th>ABOVE THE PRE-BUBBLE TREND</th>
<th>BELOW THE PRE-BUBBLE TREND</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% or more</td>
<td>0-10%</td>
</tr>
<tr>
<td>Kansas City</td>
<td>Tucson</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>Edison</td>
</tr>
<tr>
<td>Richmond</td>
<td>Salt Lake City</td>
</tr>
<tr>
<td>Baltimore</td>
<td>Riverside</td>
</tr>
<tr>
<td>Orange County</td>
<td>Denver</td>
</tr>
<tr>
<td>Miami</td>
<td>Albuquerque</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>Honolulu</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>Philadelphia</td>
</tr>
<tr>
<td>Fort Lauderdale</td>
<td>Jacksonville</td>
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<tr>
<td>Dallas</td>
<td>St. Louis</td>
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<tr>
<td>Austin</td>
<td>San Diego</td>
</tr>
<tr>
<td>Tulsa</td>
<td>Tampa</td>
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<tr>
<td>Oklahoma City</td>
<td>Phoenix</td>
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<tr>
<td>Houston</td>
<td>Los Angeles</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10%</td>
<td>10% or more</td>
</tr>
<tr>
<td>Boston</td>
<td>Detroit</td>
</tr>
<tr>
<td>San Jose</td>
<td>Las Vegas</td>
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<tr>
<td>Cincinnati</td>
<td>Dayton</td>
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<td>Providence</td>
<td>Atlanta</td>
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<td>Newark</td>
<td>Chicago</td>
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<td>San Francisco</td>
<td>Sacramento</td>
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<td>Hartford</td>
<td>Columbus</td>
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<td>Louisville</td>
<td>Charlotte</td>
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<tr>
<td>Orlando</td>
<td>Indianapolis</td>
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<td>Ventura</td>
<td>Memphis</td>
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<tr>
<td>New York</td>
<td>Oakland</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>Raleigh</td>
</tr>
</tbody>
</table>

Sources: FHFA, CBRE Econometric Advisors
... And Across Markets rents move with prices

2007q4-2012q4 average annual percent change

-15 -10 -5 0 5

Las Vegas Orlando Riverside Phoenix Jacksonville Los Angeles Atlanta Average Dallas Tulsa San Antonio Oklahoma City Austin Houston Pittsburgh

home price index rent index

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The Bottom Line

- Rental growth is weakening despite a continued increase in renters and growth in rental demand.
- Because supply is at record highs: new multi construction + conversions-to-rent.
- Going forward, renter growth will slow as foreclosures decline and credit markets loosen underwriting. The desirability of owning has not suddenly vanished.
- But these changes mean the steady supply from investor purchases (unit conversions) will also abate.
- Isn’t Economic Equilibrium wonderful