BuildZoom &
Urban Economics Lab
Index
Quarterly Report: 2015 Q1
Remodeling of existing homes is an indicator of economic health whose importance is on par with new home construction, and which better captures consumer confidence.

Remodeling of existing homes has fully recovered from the housing bust, and is 3.4% above its 2005 level. In contrast, new home construction is recovering only gradually and remains 60.7% below its 2005 level.

Locally, remodeling has surpassed 2005 levels in some metro areas, but not in others.

The remodeling of existing homes is an indicator of economic health whose importance is on par with new home construction. The Joint Center for Housing Studies at Harvard University estimates the remodeling market to be on the order of $300 billion a year, not far from the $340 billion estimated by the Census Bureau for residential construction put in place last year. Unlike new construction, which captures the outlook of homebuilders, remodeling more directly captures consumer confidence. Moreover, new construction paints a picture of the economy that is skewed towards conditions in high-growth metropolitan areas - and on their outermost fringe at that - whereas remodeling reflects the state of the economy across a more evenly distributed geography, which better represents the nation as a whole.

The BuildZoom & Urban Economics Lab index is a joint endeavor of BuildZoom and the Urban Economics Laboratory of the Center for Real Estate at MIT. The set of indices leverages BuildZoom’s growing repository of building permit data to track residential permitting activity, including the construction of new homes and the remodeling of existing homes, and was developed jointly with Professor Albert Saiz of the Center for Real Estate at MIT. The current report introduces the indices at the national level, and supplements them with indices from a small, initial selection of metropolitan areas that will gradually be expanded.
## National Indices for New Home Construction and Existing Home Remodeling

<table>
<thead>
<tr>
<th></th>
<th>2009 vs. 2005</th>
<th>Last 12 months vs. 2005</th>
<th>Percent recovered</th>
<th>Year-on-year change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of New Homes</td>
<td>-68.6%</td>
<td>-60.7%</td>
<td>11.6%</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Remodeling of Existing Homes</td>
<td>-16.8%</td>
<td>3.4%</td>
<td>120.2%</td>
<td>7.3%</td>
</tr>
</tbody>
</table>

1 Column(3) is calculated as the greater of 0 or 1 - (Column (2) / Column (1)), and only in areas in which activity fell from 2005 to 2009.
2 Year-on-year change is calculated on a quarterly basis, i.e. the last 3 months vs. the same period last year.
3 Throught the report, the term remodeling is used broadly to include to include home improvement, maintenance and repair.

Source: BuildZoom.

![Graph showing national indices for new home construction and existing home remodeling](image)

The table and graph above present the BuildZoom & Urban Economics Lab indices for construction of new homes and for remodeling of existing ones, and sets them against the Case-Shiller national housing price index.

Both new home construction and remodeling have increased since 2009, but remodeling has recovered far more substantially. New home construction is currently still 60.7% below its 2005 level, implying that it has only recovered 11.6% of its 2005 to 2009 loss. In contrast, remodeling is 3.4% above its 2005 level, meaning that it has fully recovered and recently even surpassed its pre-crisis level.
Remodeling follows a similar pattern to new construction, but is far less volatile

The three indices share a common pattern, whereby they fell during the housing bust and have risen since, but they also differ in important ways. The most striking difference is that new home construction fell far more dramatically than the others. While home remodeling fell by an estimated 16.8% from 2005 to 2009, new home construction fell by a staggering 68.6%.

The dramatic drop in new home construction demonstrates the highly volatile nature of construction, which follows from the extremely durable nature of real estate. For non-durable goods, a decrease in demand tends to suppress production proportionally, but for an extremely durable good such as housing, decreased demand can be met entirely by existing homes, causing new construction to virtually grind to a halt. This is essentially what the index for new home construction shows.

The remodeling of existing homes, on the other hand, is not as volatile. This is consistent with the fact that it involves the replacement or repair of items far less durable than the home as a whole. Moreover, remodeling includes home improvement, but it also includes maintenance and repair, which are difficult to defer when the need arises and therefore contribute to lower volatility as well.

Nevertheless, remodeling still follows the same pattern as home prices and new home construction – just more moderately – and this owes to home improvement. Existing home sales often generate home improvement projects, either in preparation for a sale or following one. Also, home equity fluctuates in tandem with home prices, and because equity is often tapped to finance home improvement it causes remodeling to fluctuate in tandem with home prices, and therefore with new construction as well.
# Metropolitan Areas

The following tables and graphs present indices of an initial selection of metropolitan areas.

## Metropolitan Area Indices of Permitting for New Home Construction

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>2009 vs. 2005</th>
<th>Last 12 months vs. 2005</th>
<th>Percent recovered¹</th>
<th>Year-on-year change²</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>-68.6%</td>
<td>-60.7%</td>
<td>11.6%</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Chicago-Naperville-Elgin, IL-IN-WI Metro Area³</td>
<td>-69.9%</td>
<td>-52.4%</td>
<td>25.0%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Dallas-Fort Worth-Arlington, TX Metro Area</td>
<td>-65.2%</td>
<td>-52.3%</td>
<td>19.8%</td>
<td>28.2%</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ Metro Area</td>
<td>-78.9%</td>
<td>-69.0%</td>
<td>12.6%</td>
<td>19.2%</td>
</tr>
<tr>
<td>San Francisco-Oakland-Hayward, CA Metro Area⁴</td>
<td>-77.1%</td>
<td>-64.0%</td>
<td>17.0%</td>
<td>64.9%</td>
</tr>
<tr>
<td>San Jose-Sunnyvale-Santa Clara, CA Metro Area</td>
<td>-63.8%</td>
<td>-24.3%</td>
<td>61.9%</td>
<td>-25.5%</td>
</tr>
</tbody>
</table>

¹ Column (3) is calculated as the greater of 0 or 1 - (Column (2) / Column (1)), and only in areas in which activity fell from 2005 to 2009.
² Year-on-year change is calculated on a quarterly basis, i.e. the last 3 months vs. the same period last year.
³ In Chicago, 2007 figures are used in lieu of 2005 figures, which are unobserved.
⁴ In San Francisco, new home construction bottomed out only in 2011, so 2011 figures are used in lieu of 2009 figures.

Source: BuildZoom.

## Metropolitan Area Indices of Permitting for Existing Home Remodeling

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<td>3.4%</td>
<td>120.2%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Chicago-Naperville-Elgin, IL-IN-WI Metro Area³</td>
<td>-20.8%</td>
<td>-8.6%</td>
<td>58.8%</td>
<td>21.6%</td>
</tr>
<tr>
<td>Dallas-Fort Worth-Arlington, TX Metro Area</td>
<td>26.7%</td>
<td>34.1%</td>
<td>...</td>
<td>-3.1%</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ Metro Area</td>
<td>-13.7%</td>
<td>-12.1%</td>
<td>11.5%</td>
<td>3.2%</td>
</tr>
<tr>
<td>San Francisco-Oakland-Hayward, CA Metro Area</td>
<td>-23.6%</td>
<td>-16.0%</td>
<td>32.1%</td>
<td>9.1%</td>
</tr>
<tr>
<td>San Jose-Sunnyvale-Santa Clara, CA Metro Area</td>
<td>-11.9%</td>
<td>12.0%</td>
<td>201.3%</td>
<td>-2.4%</td>
</tr>
</tbody>
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² Year-on-year change is calculated on a quarterly basis, i.e. the last 3 months vs. the same period last year.
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Source: BuildZoom.
San Jose-Sunnyvale-Santa Clara, CA Metro Area

Source: BuildZoom.
The single most pervasive feature of the metro area graphs is that new home construction consistently fell more than remodeling in all of the reported metros, however the metro areas differ in the extent to which permitting activity has recovered.

The San Jose metro area – Silicon Valley – stands out. The growth in remodeling in the area since 2009 is double the 2005-2009 loss, so that remodeling activity is now higher than in 2005. New home construction in the San Jose metro area has also rebounded, regaining an exceptionally high 61.9% of the loss.

At the other extreme, remodeling in the Phoenix metro area is essentially the same as it was in 2009, and in the Dallas metro area it has actually been rising throughout the entire period since 2005. How is this possible? Both of these metro areas are relatively free of geographic and regulatory constraints on growth, which keeps their home values relatively low compared to other parts of the country. Inasmuch as the housing bust reduced home values in these metros below the replacement cost, moving into a home with wanted features is now more cost-effective than creating the features in-place by remodeling. In other words, homeowners in Dallas and Phoenix often face a better bargain listing their homes than loving them, and as a result fluctuations in remodeling activity are relatively independent of home values.

Additional indices show that remodeling has recovered 32.1% of its 2005-2009 loss in the San Francisco area, while new construction has recovered only 17.0% of the 2005-2011 loss (new construction in the San Francisco metro bottomed out only in 2011). Indices for the Chicago metro area are only available starting from January 2007, and one must caution that the 2005-2009 losses are probably greater than those from 2007 to 2009. Nevertheless, the indices for the Chicago metro area show that remodeling has recovered 58.8% of its 2007-2009 loss, while new construction has recovered only 25.0% of the 2007-2009 loss.
Methodology

The BuildZoom & Urban Economics Lab index leverages BuildZoom’s repository of building permit data using a simple additive chaining method, developed and assessed in collaboration with Professor Albert Saiz (MIT). The performance of the method was assessed using a Monte Carlo simulation study, and a comprehensive account of the method and its assessment is available in a supporting technical document.

The national BuildZoom & Urban Economics Lab index of permitting for new homes is highly consistent with the corresponding numbers of permitted new homes published by the Census Bureau. The following graph compares the two (before adjusting for seasonality).

![Graph comparing BuildZoom & Urban Economics Lab index with Census data](image)

Source: BuildZoom.

The BuildZoom & Urban Economics Lab index complements residential building permit statistics published by the Census Bureau. The Census’ Building Permits Survey considers only new homes, not existing homes. In addition, whereas the Census figures are obtained from a regular questionnaire asking local governments how many building permits were issued (Form C-404), the BuildZoom & Urban Economics Lab index is compiled from the ground up, based on individual building permit records.
Transparency

BuildZoom and its partners at MIT are firmly committed to transparency of data and methods. The building permit data repository can be browsed online for free, the indices and their components are available for download, and the method used to generate the index is explained in detail in a supporting technical document. Neither the data nor the methods are perfect, and we openly invite users to inspect the resources provided and alert us to what they find.

About BuildZoom

BuildZoom is the leading construction and remodeling marketplace dedicated to providing both consumers and businesses with the information they need to make more informed decisions. BuildZoom’s unique database includes more than 3.5 million licensed contractors and nearly 100 million building permit records, collected from over 650 independent sources.

About the Authors

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Chief Economist, BuildZoom

Issi Romem is the Chief Economist at BuildZoom, where he directs the research and analytics functions. He holds a Ph.D. in economics from the University of California, Berkeley, where he continues to teach econometrics as an adjunct lecturer. In the past, he has managed staff and provided analysis for high-stakes economic litigation, and has consulted on matters involving housing, transportation and the regional economy for the Bay Area Council Economic Institute.

Prof. Albert Saiz
Director, MIT Center for Real Estate and Daniel Rose Associate Professor of Urban Economics and Real Estate

Albert Saiz is an Associate Professor of Urban Economics and Real Estate at MIT, and the Director of MIT’s Center for Real Estate. He studies housing supply issues such as drivers of renovation investment, determinants of construction costs, local measurement of zoning constringency, and the relationship between natural land constraints and home values. He also studies housing demand issues such as the impact of demographics on housing markets and determinants of urban growth and revitalization.