Third Quarter 2014: Hotel Prices Decline on a Year over Year Basis: Expect this Trend to Continue

Crocker H. Liu Ph.D.
Cornell University, chl62@cornell.edu

Adam D. Nowak Ph.D.
West Virginia University

Robert M. White Jr.

Follow this and additional works at: http://scholarship.sha.cornell.edu/cremi

Part of the Real Estate Commons

Recommended Citation
Third Quarter 2014: Hotel Prices Decline on a Year over Year Basis: Expect this Trend to Continue

Abstract
The borrowing cost of debt financing continues to remain stable while equity financing has become relatively cheaper. We expect prices for hotel properties to fall slightly in the next quarter. This is not necessarily bad news since it will give operating performance as measured by EVA a chance to continue to increase vis-à-vis an increase in the cap rate, assuming that total borrowing cost remains stable or it becomes cheaper to borrow debt or equity money. This is report number 12 of the index series.

Keywords
Cornell, EVA analysis, RevPAR, hotel indices, hotel valuation model, HOTVaL

Disciplines
Real Estate

Comments
Required Publisher Statement
© Cornell University. This report may not be reproduced or distributed without the express permission of the publisher.

Supplemental File:
Hotel Valuation Model (HOTVAL) We provide this user friendly hotel valuation model in an excel spreadsheet entitled HOTVAL Toolkit as a complement to this report which is available for download from http://scholarship.sha.cornell.edu/creftools/1/
EXECUTIVE SUMMARY

The borrowing cost of debt financing continues to remain stable while equity financing has become relatively cheaper. We expect prices for hotel properties to fall slightly in the next quarter. This is not necessarily bad news since it will give operating performance as measured by EVA a chance to continue to increase vis-à-vis an increase in the cap rate, assuming that total borrowing cost remains stable or it becomes cheaper to borrow debt or equity money. This is report number 12 of the index series.
Hotel Investment Based on Operating Performance Has Improved

Our Economic Value Added (EVA) indicator shown in Exhibit 1 has improved from -3.8 percent in 2014Q1 to -1.6 percent in 2014Q2. Looking under the hood, not only have hotel cap rates improved from 6.1 percent (2014Q1) to 6.3 percent (2014Q2), but also the weighted average borrowing cost (the average debt financing and equity financing used on a hotel deal) has declined from 9.9 percent (2014Q1) to 7.9 percent (2014Q2). We hope that this trend will continue as it suggests that hotel investors will also start to make money from hotel operations in addition to the sale of the property.

Hotel Transaction Volume Has Increased but Median Price has Not Necessarily Followed

The total volume of hotel transactions for both large hotels and small hotels increased in the third quarter. Year over year, the hotel transaction volume increased 41.8 per-

About the Cornell Hotel Indices

In our inaugural issue of the Cornell Hotel Index series, we introduced three new quarterly metrics to monitor real estate activity in the hotel market. These are a large hotel index (hotel transactions of $10 million or more), a small hotel index (hotels under $10 million), and a repeat sales index (RSI) that tracks actual hotel transactions. These indices are constructed using the CoStar and Real Capital Analytics (RCA) commercial real estate databases. For the repeat-sale index, we compare the sales and resales of the same hotel over time. All three measures provide a more accurate representation of the current hotel real estate market conditions than does reporting average transaction prices, because the average-price index doesn’t account for differences in the quality of the hotels, which also is averaged. A more detailed description of these indices is found in the first edition of this series, “Cornell Real Estate Market Indices,” which is available at no charge from the Cornell Center for Real Estate and Finance (CREF). In this fourth edition, we present updates and revisions to our three hotel indices along with commentary and supporting evidence from the real estate market.
Exhibit 1

Economic value added (EVA) for hotels

Exhibit 2

Median sale price and number of sales for large hotels (sale prices of $10 million or more)

Sources: CoStar, Real Capital Analytics
percent (2013Q3 to 2014Q3). This increase is slightly lower than the 48.4-percent increase (2013Q2 to 2014Q2) in the second quarter. A similar trend exists on a quarter-over-quarter basis with the quarter-two total hotel volume rising 10.3 percent (2014Q2 to 2014Q3) in contrast to 40.6 percent in the first quarter, that is, from 2014Q1 to 2014Q2. With respect to large versus small hotels, the volume of large hotel transactions included in our hedonic index rose 13.1 percent while small hotel transaction volume rose by 9.3 percent from the previous quarter.¹ The transaction volume for large hotels increased 39.7 percent on a year-over-year basis; small hotel transaction volume experienced a even greater gain with a year-over-year growth rate of 42.5 percent.

In contrast to hotel transaction volume, the median price for large hotels fell 29.1 percent while the median price for small hotels declined 3.5 percent on a year-over-year basis. A slightly different situation existed on a quarter-over-quarter basis with large hotels experiencing a 24.9-percent loss, while smaller hotels experienced a 21.5 percent gain. Exhibit 2 and Exhibit 3 show a positive trend in the number of transactions for large hotels and small hotels. However, these exhibits also show that the median price has moved sideways for the last several quarters for large hotels, although it has continued to increase in general for smaller hotels.

The bottom line is that hotel transaction volume is rising at a decreasing rate. The median price for large hotels has been moving laterally for the last several quarters in contrast to smaller hotels that have experienced a positive momentum in median price.

Déjà Vu All Over Again: History Continues to Repeat

Hotel prices continue to behave in a similar manner relative to the 2003Q1 to 2010Q2 cycle, based on repeat sales. Exhibit 4 provides the price index for the repeat hotel sales used to construct our RSI cycle analysis in Exhibit 5 together with the hedonic price indices for small and large hotels. Exhibit 5 continues to confirm our prior numbers based on cycle analysis.

¹ Note that this should not be construed as being the total market activity.
### Exhibit 4

**Hotel indices through 2014, quarter 3**

<table>
<thead>
<tr>
<th>YrQtr</th>
<th>Hedonic Low Priced Hotels (&lt;$10M)</th>
<th>Hedonic High Priced Hotels (&gt;=$10M)</th>
<th>RSI Repeat Sales Index</th>
<th>RSI Repeat Sales Index Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995.02</td>
<td>100.784</td>
<td>65.569</td>
<td>68.742</td>
<td>127.978</td>
</tr>
<tr>
<td>1995.03</td>
<td>102.373</td>
<td>59.293</td>
<td>88.744</td>
<td>135.817</td>
</tr>
<tr>
<td>1995.04</td>
<td>103.519</td>
<td>56.798</td>
<td>85.633</td>
<td>139.106</td>
</tr>
<tr>
<td>1996.01</td>
<td>99.460</td>
<td>86.886</td>
<td>88.176</td>
<td>140.863</td>
</tr>
<tr>
<td>1996.02</td>
<td>97.203</td>
<td>96.188</td>
<td>89.748</td>
<td>145.999</td>
</tr>
<tr>
<td>1996.03</td>
<td>101.866</td>
<td>103.665</td>
<td>87.141</td>
<td>150.112</td>
</tr>
<tr>
<td>1996.04</td>
<td>97.011</td>
<td>111.744</td>
<td>85.199</td>
<td>152.900</td>
</tr>
<tr>
<td>1997.01</td>
<td>106.794</td>
<td>108.011</td>
<td>100.010</td>
<td>152.014</td>
</tr>
<tr>
<td>1997.02</td>
<td>107.022</td>
<td>109.232</td>
<td>101.507</td>
<td>159.320</td>
</tr>
<tr>
<td>1997.03</td>
<td>102.728</td>
<td>112.193</td>
<td>100.947</td>
<td>159.911</td>
</tr>
<tr>
<td>1997.04</td>
<td>105.987</td>
<td>116.189</td>
<td>114.855</td>
<td>156.374</td>
</tr>
<tr>
<td>1998.01</td>
<td>104.193</td>
<td>120.407</td>
<td>106.334</td>
<td>154.306</td>
</tr>
<tr>
<td>1998.02</td>
<td>112.509</td>
<td>131.005</td>
<td>110.173</td>
<td>157.427</td>
</tr>
<tr>
<td>1998.03</td>
<td>114.743</td>
<td>125.837</td>
<td>111.789</td>
<td>157.954</td>
</tr>
<tr>
<td>1998.04</td>
<td>115.803</td>
<td>140.303</td>
<td>98.671</td>
<td>154.104</td>
</tr>
<tr>
<td>1999.01</td>
<td>114.418</td>
<td>135.584</td>
<td>94.861</td>
<td>154.702</td>
</tr>
<tr>
<td>1999.02</td>
<td>106.730</td>
<td>117.990</td>
<td>92.742</td>
<td>150.594</td>
</tr>
<tr>
<td>1999.03</td>
<td>104.451</td>
<td>129.998</td>
<td>90.650</td>
<td>140.896</td>
</tr>
<tr>
<td>1999.04</td>
<td>102.808</td>
<td>112.705</td>
<td>92.343</td>
<td>137.148</td>
</tr>
<tr>
<td>2000.01</td>
<td>100.543</td>
<td>111.851</td>
<td>95.120</td>
<td>133.489</td>
</tr>
<tr>
<td>2000.02</td>
<td>101.493</td>
<td>111.006</td>
<td>98.543</td>
<td>127.799</td>
</tr>
<tr>
<td>2000.03</td>
<td>100.169</td>
<td>108.878</td>
<td>96.666</td>
<td>127.514</td>
</tr>
<tr>
<td>2000.04</td>
<td>103.075</td>
<td>112.745</td>
<td>95.793</td>
<td>126.680</td>
</tr>
<tr>
<td>2001.01</td>
<td>105.901</td>
<td>132.076</td>
<td>94.883</td>
<td>123.174</td>
</tr>
<tr>
<td>2001.02</td>
<td>110.032</td>
<td>145.885</td>
<td>96.257</td>
<td>124.761</td>
</tr>
<tr>
<td>2001.03</td>
<td>112.320</td>
<td>133.423</td>
<td>98.391</td>
<td>131.186</td>
</tr>
<tr>
<td>2001.04</td>
<td>110.075</td>
<td>134.026</td>
<td>99.550</td>
<td>117.721</td>
</tr>
<tr>
<td>2002.01</td>
<td>107.155</td>
<td>116.803</td>
<td>98.026</td>
<td>122.939</td>
</tr>
<tr>
<td>2002.02</td>
<td>103.147</td>
<td>102.139</td>
<td>94.424</td>
<td>123.032</td>
</tr>
<tr>
<td>2002.03</td>
<td>103.592</td>
<td>99.931</td>
<td>95.646</td>
<td>127.276</td>
</tr>
<tr>
<td>2002.04</td>
<td>106.594</td>
<td>105.220</td>
<td>94.279</td>
<td>133.929</td>
</tr>
<tr>
<td>2003.01</td>
<td>109.090</td>
<td>106.173</td>
<td>97.206</td>
<td>134.760</td>
</tr>
<tr>
<td>2003.02</td>
<td>112.903</td>
<td>123.187</td>
<td>99.202</td>
<td>135.777</td>
</tr>
<tr>
<td>2003.03</td>
<td>115.920</td>
<td>131.120</td>
<td>98.811</td>
<td>134.507</td>
</tr>
<tr>
<td>2003.04</td>
<td>115.261</td>
<td>133.329</td>
<td>98.998</td>
<td>136.444</td>
</tr>
<tr>
<td>2004.01</td>
<td>116.214</td>
<td>134.377</td>
<td>98.057</td>
<td>135.130</td>
</tr>
<tr>
<td>2004.03</td>
<td>115.872</td>
<td>121.928</td>
<td>103.657</td>
<td>137.199</td>
</tr>
<tr>
<td>2004.04</td>
<td>120.461</td>
<td>114.773</td>
<td>105.947</td>
<td>136.604</td>
</tr>
</tbody>
</table>
**Exhibit 5**

Comparison of hotel real estate cycles using repeat sales

[Hedonic hotel indices for large and small hotel transactions](#)

**Exhibit 6**

Hedonic hotel indices for large and small hotel transactions

*Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics*
Exhibit 7

Large hotel index, with three-year and five-year moving averages

Exhibit 8

Year-over-year change in large-hotel index, with moving-average trendline
Prices of Large and Small Hotels Continue to Move Sideways, with Downward Pressure Indicated on a Year-over-Year Basis

Exhibit 6 shows that prices for the large-hotel and small-hotel indices continue to remain more or less flat in general. However, Exhibit 7 shows that the large hotel index has approximately converged to its three-year moving average, signaling a “hold.” Exhibit 8 provides further confirmation that the large-hotel index has slowed on a year-over-year basis and in fact has started to decline. Exhibit 9 shows that the current price for smaller hotels also appears to be converging towards its three-year moving average. As in the case of larger hotels, Exhibit 10 reveals that year-over-year growth in the price of small hotels has started to decline as well.
Exhibit 10

Year-over-year change in small-hotel index, with moving-average trendline

Source: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

Exhibit 11

Hotel repeat-sale index (full sample), three-year moving average, and five-year moving average

Source: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics
Repeat Sales Tell a Similar Story in Terms of Flattening Price Movement, with Declining Year-over-Year Price Momentum

The price movement of repeat hotel sales in Exhibit 11 tells a similar story to the price movement of large and small hotels using hedonic indices with prices continuing to move sideways. The current repeat sale index of 114.237 (full sample, for (2014Q3) is slightly below (-.2%) the previous quarter’s (2014Q2) index of 114.417 (although the difference is indistinguishable). However, the repeat hotel sale index rose 6 percent on a year-over-year basis (2014Q3 to 2013Q3). Exhibit 12 provides an alternative perspective of the price momentum in the repeat sales. Similar to large and small hotels, the index is now decreasing on a year-over-year basis. Price growth based on repeat sales is moderating (flattening) at best, with downward price momentum evident on a year-over-year basis.

2 As explained in previous publications, we report two repeat sale indices. The repeat sale full sample index uses all repeat sale pairs whereas the repeat sale index with a base of 100 at 2000Q1 uses only those sales that occurred on or after the first quarter of 2000. As such, if a hotel sold in 1995 and then sold again in 2012, it would be included in the first repeat sale index, that is, the repeat sale full sample index but it would not be included in the post-2000 repeat sale index.
**Exhibit 13**

Decomposition of ACLI hotel capitalization rates into risk premium and risk-free rate

![Graph showing the decomposition of hotel cap rate into risk premium and risk-free rate.]

Sources: ACLI, Cornell Center for Real Estate and Finance

**Exhibit 14**

Mortgage origination volume for hotels

![Graph showing the hotel origination volume index and year-over-year hotel origination volume index.]

Sources: Cornell Center for Real Estate and Finance, Mortgage Bankers Association
Cap Rates Are Rising

For the second quarter of 2014, the latest quarter for which ACLI reports data on hotel cap rates, cap rates have risen slightly, from 6.095 percent in 2014Q1 to 6.26 percent in 2014Q2. Exhibit 13 shows that although the rate on the 10-year Treasury bond (constant maturity) declined from 2.72 percent to 2.6 percent, the hotel cap rate spread over the 10-year treasury continued to increase, from 3.38 percent to 3.66 percent. In the second quarter, the hotel cap rate spread over the 10-year treasury increased from 3.24 percent to 3.38 percent. Based on those numbers it appears that hotel investors are demanding increased compensation for greater perceived risk.

Mortgage Financing Volume Has Remained Relatively Stable on a Year-over-Year Basis

Exhibit 14 shows that the mortgage origination volume for hotels as reported for 2014Q2 is 45.4-percent greater than the previous year (2013Q2). This compares to a 43.2 percent year-over-year increase (2013Q1 relative to 2012Q1) for the first quarter.
Cost of Debt Financing Has Remained Relatively Flat, although the Relative Risk Premium for Hotels Continues to Increase

The cost of obtaining hotel financing has continued to remain relatively constant since July 2013 (see Exhibit 15), when the interest rate was at 4.81 percent for Class A Hotels, and 5.06 percent for B&C properties. As of September 2014, the interest rate on Class A hotels is 5.02 percent, and for Class B&C hotels 5.22 percent. These rates remained unchanged from those reported in June 2014. Exhibit 16 and Exhibit 17 depict interest rate spreads relative to different benchmarks. Exhibit 16 shows the spread between Class A and Class B&C interest rates on full-service hotels over the ten-year Treasury bond. On this metric, interest rate spreads have risen indicating that the lenders are demanding additional compensation for risk associated with lending on hotels. Exhibit 17 shows the spread between the interest rate on Class A and on class B&C full-service hotels over the interest rate corresponding to non-hotel commercial real estate (the hotel real estate premium). 3 The hotel real estate premiums for both higher quality (.65%) and lower quality (.75%) hotels have continued to increase relative to the previous two quarters (.57% for high quality, and .67% for lower quality for 2014Q2; and .53% for high quality and .63% for lower quality for 2014Q1). The continued increase in the premium in Exhibit 17 is a signal that the perceived default risk for hotel properties continues to rise relative to other commercial real estate. The reason why we have not seen an increase in the cost of borrowing debt even though the relative risk premium for hotels has been increasing is because of the decline in the 10-year treasury rate.

3 The interest rate on hotel properties is generally higher than that for apartment, industrial, office, and retail properties, in part because hotels’ cash flow is commonly more volatile than that of other commercial properties.
Exhibit 17

Interest-rate spreads of hotels versus non-hotel commercial real estate

Exhibit 18

Cost of equity financing using the Capital Asset Pricing Model and hotel REITs

Source: Cushman Wakefield Sonnenblick Goldman

Source: Cornell Center for Real Estate and Finance, NAREIT
Expect a Decline in the Price of Both Large and Small Hotels, According to the Tea Leaves

Exhibit 20 compares the performance of the repeat sales index relative to the NAREIT Lodging/Resort Price Index. The repeat sales index tends to lag the NAREIT index by at least one quarter or more. This is consistent with prior academic studies which find that securitized real estate is a leading indicator of underlying real estate performance since the stock market is forward looking or efficient. Looking ahead, the NAREIT lodging index has lost its forward momentum, declining 3.7 percent this quarter after several quarters of positive gains (2013Q2-2014Q2). The architecture billings index (ABI) for commercial and industrial property, which represents another forward-looking metric also declined, losing 6 percent this quarter (2014Q3) compared to an 8-percent gain in the previous quarter, as shown in Exhibit 21.\(^6\) In contrast to these indicators, the National Association

Cost of Equity Financing Has Diminished

The cost of using equity financing for hotels continues to shrink, as measured using the Capital Asset Pricing Model (CAPM) on Hotel REIT returns (shown in Exhibit 18). The cost of using equity funds stood at 11.5 percent for 2014Q2, down from 14.3 percent in the first quarter (2014Q1) and down from 13.1 percent in the second quarter of 2013 (2013Q2). This lower cost is due to a reduction in the systematic risk (beta) of hotel REITs. In terms of total risk (systematic risk + risk that is unique to hotel REITs), Exhibit 19 depicts that the total risk of Hotel REITs is similar to the total risk of equity REITs in general.\(^4\) As the total risk of Hotel REITs increases relative to the total risk for equity REITs, expect to see interest rates on hotel financing rise relative to other property types due to the increased likelihood of hotel defaults.\(^5\)

\(^4\) We calculate the total risk for hotel REITs using a 12 month rolling window of monthly return on hotel REITs.


\(^6\) We used the May ABI index as reported on June 19, 2014, since the June ABI index will be reported after the writing of this report. The ABI anticipates non-residential construction activity by approximately 9 to 12 months. According to material posted on their website, “The indexes are developed from the monthly Work-on-the-Boards survey panel where
Exhibit 20

Hotel repeat sales index versus NAREIT lodging/resort price index

Exhibit 21

Hotel repeat sales index versus architecture billings index

Sources: Cornell Center for Real Estate and Finance, NAREIT

Sources: Cornell Center for Real Estate and Finance, American Institute of Architects
of Purchasing Managers (NAPM) index, which is an indicator of anticipated business confidence and thus business traveler demand continued to gain ground, rising 4 percent this quarter after a 4.7-percent gain in the previous quarter (see Exhibit 22).7 The absolute level of the index has continued to stay above 50 (57.6, in the third quarter of 2014) since 2009Q3, indicating that the manufacturing sector continues to gain strength.

The Consumer Confidence Index from the Conference Board, shown in Exhibit 23, which we use as a proxy for anticipated consumer demand for leisure travel and a leading indicator of the hedonic index for low priced hotels, fell slightly in September (blue line) to 86, a .46-percent decline on a quarter-over-quarter basis, consistent with our other forward-looking indicators.

7 The ISM: Purchasing Managers’ Index (Diffusion Index, SA), also known as the National Association of Purchasing Managers (NAPM) index, is based on a survey of over 250 companies within twenty-one industries covering all 50 states. It not only measures the health of the manufacturing sector but is a proxy for the overall economy. It is calculated by surveying purchasing managers for data about new orders, production, employment, deliveries, and inventory, in descending order of importance. A reading over 50 percent indicates that manufacturing is growing, while a reading below 50 percent means it is shrinking.
Hotel Valuation Model (HOTVAL) Has Been Updated

We have updated our hotel valuation regression model to include the transaction data used to generate this report. We provide this user friendly hotel valuation model in an Excel spreadsheet entitled “HOTVAL Toolkit” as a complement to this report which is available for download from our CREF website.
ABOUT THE AUTHORS


Adam D. Nowak, Ph.D., is an assistant professor of economics at West Virginia University. He earned degrees in mathematics and economics at Indiana University–Bloomington in 2006 and a degree in near-east languages and cultures that same year. He received a Ph.D. from Arizona State University last May. His thesis title was "Eigenvector Methods and Cointegrated Series." Nowak taught an introduction to macroeconomics course and a survey of international economics at Arizona State. He was the research analyst in charge of constructing residential and commercial real estate indices for the Center for Real Estate Theory and Practice at Arizona State University.

Robert M. White, Jr., CRE, is the founder and president of Real Capital Analytics Inc., an international research firm that publishes the Capital Trends Monthly. Real Capital Analytics provides real time data concerning the capital markets for commercial real estate and the values of commercial properties. Mr. White is a noted authority on the real estate capital markets with credits in the Wall Street Journal, Barron's, The Economist, Forbes, New York Times, Financial Times, among others. In addition, he was named one of National Real Estate Investor Magazine's "Ten to Watch" in 2005, Institutional Investor's "20 Rising Stars of Real Estate" in 2006, and Real Estate Forum's "10 CEOs to Watch" in 2007. Previously, Mr. White spent 14 years in the real estate investment banking and brokerage industry and has orchestrated billions of commercial sales, acquisitions and recapitalizations. He was formerly a managing director and principal of Granite Partners LLC and spent nine years with Eastdil Realty in New York and London. Mr. White is a Counselor of Real Estate, a Fellow of the Royal Institution of Chartered Surveyors and a Fellow of the Homer Hoyt Institute. He is also a member of numerous industry organizations and a supporter of academic studies. Mr. White is a graduate of the McIntire School of Commerce at the University of Virginia.

We wish to thank Glenn Withiam for copy editing this paper.