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First Quarter 2019: Déjà Vu All Over Again: Reliving Groundhog Day

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Abstract
Hotels in non-gateway cities outperformed those in gateway cities for the first time since the first quarter of 2006. That said, overall hotel financial performance still stands at breakeven, with operating profit similar to a hotel property's borrowing cost based on economic value analysis. Smaller hotels and hotels involved a repeated sale rose in price, while larger hotels continued their downward price spiral. The cost of hotel debt financing has declined, with a narrowing in the relative risk premium for hotels. A reading of our tea leaves suggests prices are expected to decline for both large and small hotels. This is report number 30 of the index series.

Keywords
Cornell Hotel Indices, economic value analysis (EVA), hotel prices, hedonic hotel index, gateway cities

Disciplines
Real Estate

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Hotels in non-gateway cities outperformed those in gateway cities for the first time since the first quarter of 2006. That said, overall hotel financial performance still stands at breakeven, with operating profit similar to a hotel property’s borrowing cost based on economic value analysis. Smaller hotels and hotels involved a repeated sale rose in price, while larger hotels continued their downward price spiral. The cost of hotel debt financing has declined, with a narrowing in the relative risk premium for hotels. A reading of our tea leaves suggests prices are expected to decline for both large and small hotels. This is report number 30 of the index series.
We wish to thank Glenn Withiam for copy editing this paper.


Adam D. Nowak is an associate 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. 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. Nowak’s research has been published in the Journal of Urban Economics, Regional Science and Urban Economics, Journal of Applied Econometrics, Real Estate Economics, and the Journal of Real Estate Research.

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, and Financial Times, among others. He is the 2014 recipient of the James D. Landauer/John R. White Award given by The Counselors of Real Estate. In addition, he was named one of National Real Estate Investor Magazine’s “10 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 serves on the board of directors for the Pension Real Estate Association and the advisory board for the Real Estate Research 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. White’s research has been published in the Journal of Real Estate Finance and Economics.

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

Disclaimer: The Cornell hotel indices, produced by The Center for Real Estate and Finance at the School of Hotel Administration at Cornell University, are provided as a free service to academics and practitioners on an as-is, best-effort basis with no warranties or claims regarding its usefulness or implications. The indices are not audited, and they are not necessarily free of errors or omissions although every effort has been made to minimize these. The reported indices for any quarter of any year should be considered preliminary and subject to revision.
Hotel investment based on operating performance is still in the black. Although our Economic Value Added (EVA) indicator turned down slightly (-0.004, as shown in Exhibit 2), hotel investment remains essentially at breakeven, as the EVA has continued to hover around zero since the second quarter of 2016. Although the ACLI hotel cap rate has fallen from 7.02 percent (2018Q3) to 6.87 percent (2018Q4), the cost of debt financing also fell, from 6.95 percent to 6.67 percent over the same period. Thus, Exhibit 3 suggests that although positive leverage continued to be the norm for hotel deals in 2018Q4 (latest quarter for which ACLI data exist), penciling feasible deals is getting harder, given the tightening of the spread between the cap rate and the cost of debt financing. Intuitively, the investor should receive a higher return than his or her borrowing cost.

The median price of hotels fell on a quarterly basis, as well as year over year. In the first quarter of 2019, the median price of hotels fell approximately 17 percent from the previous quarter ($5.34M versus $6.445M), even though the total volume of all hotel transactions (both large hotels and small hotels combined) increased 3.02 percent (that is, 290 transactions versus 280 transactions, as reported in Exhibit 4). Year over year (2018Q1 versus 2017Q1), the median price of hotels fell 4.6 percent on weaker volume (-6.8%). A comparison of large hotels relative to small hotels on a year-over-year basis reveals that the median price of large hotels fell almost 18 percent (compared to a drop of 26.8 percent in the prior period on weaker volume, which declined 22 percent), while in contrast the median price of smaller hotels rose imperceptibly by 0.7 percent.

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### 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 RCA commercial real estate databases. The large and small hotel indices are similar in nature and construction to the consumer price index (CPI), while the repeat sale hotel index is analogous to the retail concept of same store sales. Using a similar logic process for hotels, we compare the sales and resales of the same hotel over time for that index. All three measures provide a more accurate representation of the current hotel real estate market conditions than does reporting the 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. Starting with our 2018Q1 issue, we introduced the Gateway Cities Index as a new metric in our hotel analytics arsenal. Cities that we define as gateway cities are Boston, Chicago, Honolulu, Los Angeles, Miami, New York, San Francisco, and Washington, D.C. In this issue, we present updates and revisions to our hotel indices along with commentary and supporting evidence from the real estate market.

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**For a general discussion on what constitutes a gateway city, see:** Corgel, J.B. (2012), What Is a Gateway City?: A Hotel Market Perspective, Center for Real Estate and Finance Reports, Cornell University School of Hotel Administration. The study of Corgel, J. B., Liu, C., & White, R. M. (2015). Determinants of hotel property prices. Journal of Real Estate Finance and Economics, 51, 415-439 finds that a significant driver of hotel property prices is whether a hotel is located in a gateway city. The presumption is that hotels (and other real estate in gateway cities exceed other cities as IRR generators in part due to a generally stronger economic climate as a result of higher barriers to entry, tighter supply, and/or relatively stronger performance in terms of revenue per available room than other top cities that are not gateways.**
### Exhibit 4a
- **Transaction volume (Obs) and median sale price (part 1: 1995–2004)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Big</th>
<th>Small</th>
<th>Non-Gateway</th>
<th>Gateway</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

### Exhibit 4b
- **Transaction volume (Obs) and median sale price (part 2: 2005–2014)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Big</th>
<th>Small</th>
<th>Non-Gateway</th>
<th>Gateway</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

...
percent (albeit on low volume, which increased 0.5%).

A similar situation exists on a quarter-over-quarter basis for large hotels, with the median sale price of large hotels falling 13 percent on weaker transaction volume (-27%), while the median sale price of smaller hotels rose almost 7 percent on stronger volume (22%).

Exhibits 5 and 6 show this year-over-year trend in the number of transactions for large hotels and small hotels.

Our moving average trendlines and our standardized unexpected price (SUP) performance metrics both point to negative price momentum for large hotels, with small hotels continuing to experi-
Exhibit 7

Hotel indices through 2019, quarter 1

Exhibit 8

Hedonic hotel indices for large and small hotel transactions

ence positive price performance in general. Exhibit 8, which graphs the prices reported in Exhibit 7, shows that the prices of large hotels continue their downward trend, falling another 2 percent this quarter following a similar drop of 2 percent in the previous quarter. Smaller hotels’ prices rose imperceptibly, by 0.35 percent, this quarter compared to a 2.88 percent increase last quarter. Exhibit 9 shows that on a year-over-year basis, large hotels’ prices also fell, dropping 2.37 percent from 2018Q1 to 2019Q1, down from a gain of 0.87 percent in the prior year-over-year period (2017Q4-2018Q4). Exhibit 10 shows that smaller hotels rose 6.11 percent from 2018Q1 to 2019Q1, up from 5.5 percent in the prior period (2017Q4-2018Q4).
Consistent with our analysis thus far, our moving average trend lines for large hotels, in Exhibit 11, show that the price for large hotels has now fallen below both its short-term and long-term moving average trend lines—indicating the extent to which large hotels have continued to lose price momentum. In contrast to this, Exhibit 12 shows that the price for smaller hotels not only continues to exceed both its short-term and long-term moving average trend lines, but it also shows that the spread between the price and these trend lines is widening from the prior period. Thus we see that positive price momentum continues to persist for small hotels this quarter. This indicates a continued signal that small hotels are still a buy and hold, with a sell signal indicated for larger hotels.
Our Standardized Unexpected Price (SUP) metrics in Exhibit 13 show that the price of large hotels continued its descent this quarter. Although the standardized price of small hotels remained above the upper significance band as depicted in Exhibit 14 indicating continued statistically significant positive price momentum, the standardized price was somewhat lower relative to the prior period.
Repeat sales metrics: prices continue to rise.

Similar to smaller hotels, our repeat-sale indicator for the moving average trendline in Exhibit 15 indicates a continuation of the positive price momentum. The price of hotels that have sold more than once (repeat sales) is still higher than either its short-term or long-term moving average. Our SUP performance metric in Exhibit 16 indicates that although standardized prices continue to demonstrate positive strength this quarter they have moved sideways and remain just below the upper significance line, in contrast to the situation with small hotels (shown in Exhibit 14). Exhibit 17 shows that the repeat sale price index has turned upwards rising 5.5 percent year over year (2018Q1 to 2019Q1), up from 3 percent year over year in the previous period (2017Q4 to 2018Q4). It also increased about 1.74 percent quarter over quarter (2018Q4-2019Q1), up from 1 percent in the previous quarter (2018Q3 to 2018Q4).

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Exhibit 15
Moving average trend line for repeat sale-hotel index

Exhibit 16
Standardized Unexpected Price (SUP) for hotel repeat sale index (full sample)

Exhibit 17
Year-over-year change in repeat-sale index, with moving-average trend line

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Notes:
1. 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. In other words, the latter repeat sale index thus doesn’t use information on sales prior to 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 repeat sale index that comprises older properties.
Mortgage financing volume for hotels declined year over year, but rose quarter over quarter. Exhibit 18 shows that mortgage origination volume for hotels as reported for 2018Q4 is 4 percent lower on a year-over-year basis (2017Q4-2018Q4), continuing a downward trend from the previous period (which saw a 19 percent decline). However, the mortgage origination volume for hotel was higher (56%) on a quarter-over-quarter basis (2018Q4 compared to 2018Q3). The maximum loan-to-value (LTV) ratio for hotels once again stood at 70 percent.

The cost of hotel debt financing has declined, with a narrowing in the relative risk premium for hotels. The cost of obtaining hotel debt financing, as reported for this quarter by Cushman Wakefield Sonnenblick Goldman, declined 9.5 percent for Class A hotels, and dropped 10 percent for Class B&C hotels.

3 This is the latest information reported by the Mortgage Bankers Association as of the writing of this report.

4 The interest rate reported by Cushman Wakefield Sonnenblick Goldman (CWSG) differs from the interest rate used to calculate our EVA metric which is based on the interest rate reported by hotel deals (as well as Class B and C properties) also declined on a year-over-year basis, by approximately 13 percent. Interest rates stood at 4.58 percent for Class A hotels and 4.73 percent for Class B and C hotels in the first quarter of 2019 (i.e., March 2019) compared to 5.09 percent for Class A properties and 5.29 percent for Class B and C hotels in the fourth quarter of 2018 (that is, December 2018). Year over year, interest rates fell from 5.25 percent to 4.58 percent for Class A hotels, and from 5.45 percent to 4.73 percent for Class B and C properties. This downward trend in interest rates started in November 2018.

Exhibit 20 and Exhibit 21 depict interest-rate spreads relative to different benchmarks. Exhibit 20 shows the spread between Class A interest rates on full-service hotels (as well as Class B and C rates) over the ten-year Treasury bond. On this metric, interest

Source: Cushman Wakefield Sonnenblick Goldman

### Exhibit 18

**Mortgage origination volume versus loan-to-value ratio for hotels**

Source: Cornell Center for Real Estate and Finance, Mortgage Bankers Association

### Exhibit 19

**Interest rates on Class A hotels versus Class B and C properties**

Source: Cushman Wakefield Sonnenblick Goldman

### Exhibit 20

**Interest-rate spreads of hotels versus U.S. Treasury ten-year bonds**

Source: Cushman Wakefield Sonnenblick Goldman
Rate spreads fell 35 basis points for Class A hotels and also dropped 40 bps for Class B and C hotels in the current quarter, relative to the prior quarter (Class A: 2.10 percent versus a 2.45-percent spread; Class B: 2.25 percent versus a 2.65-percent spread). The fall in interest rate spreads signals that lenders view hotels as relatively less risky in comparison to our last report. As such, lenders’ compensation for risk associated with hotel loans has decreased. Exhibit 21 shows the spread between the interest rate on full-service Class A hotels (and B and C properties) over the interest rate corresponding to non-hotel commercial real estate. These differential interest rates represent the hotel real estate premium. The monthly hotel real estate premium averaged 0.35 percent in the current quarter (2019Q1) compared to 0.43 percent in the previous quarter (2018Q4). For Class B hotels the premium dipped from 53 percent to 40 percent in that time period. This is a signal that the perceived default risk for hotel properties relative to other commercial real estate has declined imperceptibly this quarter compared to the previous quarter (that is, a drop of 8 bps for Class A hotels and a reduction of 13 bps for Class B properties).

Cost of equity financing remained relatively constant, albeit with a slight, imperceptible increase, although the riskiness of hotels relative to other types of commercial real estate has fallen. The cost of using equity financing for hotels as measured using the Capital Asset Pricing Model (CAPM) on hotel REIT returns, as shown in Exhibit 22, increased imperceptibly this quarter compared to the previous quarter (that is, a drop of 8 bps for Class A hotels and a reduction of 13 bps for Class B properties).

The cost of borrowing equity capital has thus remained relatively stable. In terms of total risk (systematic risk + risk that is unique to hotel real estate), the hotel real estate premium averaged 0.35 percent in the current quarter (2019Q1) compared to 0.43 percent in the previous quarter (2018Q4). For Class B hotels the premium dipped from 53 percent to 40 percent in that time period. This is a signal that the perceived default risk for hotel properties relative to other commercial real estate has declined imperceptibly this quarter compared to the previous quarter (that is, a drop of 8 bps for Class A hotels and a reduction of 13 bps for Class B properties).

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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, namely office, retail, industrial and apartments.

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REITs). Exhibit 23 shows that the total risk of hotel REITs fell this past quarter relative to the total risk of equity REITs as a whole. This is consistent with the slight reduction of perceived risk with regard to hotels shown in Exhibit 21. Expect lower borrowing costs for hotel loans to ensue given these metrics.

Expect the price of large hotels and small hotels to fall, based on our reading of the tea leaves. Exhibit 24 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 studies which find that securitized real estate is leading indicator of underlying real estate performance, since the stock market is forward looking or efficient.

Looking ahead, the NAREIT lodging index rose 14 percent this quarter compared to a drop of 22 percent in the prior quarter, while it also increased 5.5 percent year-over-year. The moving average NAREIT Lodging/Resort trendline has started to trend up, signaling a positive price momentum.

7 We calculate the total risk for hotel REITs using a 12 month rolling window of monthly return on hotel REITs.

The architecture billings index (ABI) for commercial and industrial property, which represents another forward-looking metric, increased this quarter from the previous quarter, as shown in Exhibit 25 (53.9 versus 51.2). The ABI metric provides confirmatory evidence that we should expect increasing price momentum. The National Association of Purchasing Managers (NAPM) index shown in Exhibit 26, which is an indicator of anticipated business confidence and thus business traveler demand, decreased to 6.7 percent year over year (with a 2.2 percent rise on a quarter-over-quarter basis), compared to a 9.4 percent drop in the prior year-over-year period (2017Q4-2018Q4).8

8 As of the time of this writing, only the February 2019 AIA Billings Index has been reported. See: www.aia.org/practicing/economics/aia076265

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% indicates that manufacturing is growing, while a reading below 50% means it is shrinking.
Exhibit 27

Consumer confidence index and low-price hotel index

Consumer confidence index

Four-period moving average of consumer confidence index

Low-price hotel hedonic index

Exhibit 27

Consumer confidence index and low-price hotel index

Based on the moving average trendline for NAPM index, we expect the price of large hotels to continue to decline on a year-over-year basis. The Consumer Confidence Index from the Conference Board, 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, graphed in Exhibit 27, fell almost 3 percent year over year (and 3 percent quarter over quarter), reversing the positive trend from the previous period (which saw a 5-percent increase). We expect the price momentum for small hotels to decline in the next quarter.

Appendix

SUP: The Standardized Unexpected Price Metric

The standardized unexpected price metric (SUP) is similar to the standardized unexpected earnings (SUE) indicator used to determine whether earnings surprises are statistically significant. An earnings surprise occurs when the firm’s reported earnings per share deviates from the street estimate or the analysts’ consensus forecast. To determine whether an earnings surprise is statistically significant, analysts use the following formula:

\[
SUE_Q = \frac{(A_Q - m_Q)/s_Q}{s_Q}
\]

where \( SUE_Q = \) quarter Q standardized unexpected earnings,

\( A_Q = \) quarter Q actual earnings per share reported by the firm,

\( m_Q = \) quarter Q consensus earnings per share forecasted by analysts in quarter Q-1, and

\( s_Q = \) quarter Q standard deviation of earnings estimates.

From statistics, the SUEQ is normally distributed with a mean of zero and a standard deviation of one (~N(0,1)). This calculation shows an earnings surprise when earnings are statistically significant, when \( SUE_Q > 1.645 \) (90% significant) or \( SUE_Q < -1.645 \) (95% significant). The earnings surprise is positive when \( SUE_Q > 1.645 \), which is statistically significant at the 90% level assuming a two-tailed distribution. Similarly, if \( SUE_Q < -1.645 \) then earnings are negative, which is statistically significant at the 90% level. Intuitively, SUE measures the earnings surprise in terms of the number of standard deviations above or below the consensus earnings estimate.

From our perspective, using this measure complements our visual analysis of the movement of hotel prices relative to their three-year and five-year moving average (\( \mu \)). What is missing in the visual analysis is whether prices diverge significantly from the moving average in statistical terms. In other words, we wish to determine whether the current price diverges at least one standard deviation from \( \mu \), the historical average price. The question we wish to answer is whether price is reverting to or diverging from the historical mean. More specifically, the question is whether this is price mean reverting.

To implement this model in our current context, we use the three- or five-year moving average as our measure of \( \mu \) and the rolling three- or five-year standard deviation as our measure of \( \sigma \). Following is an example of how to calculate the SUP metric using high price hotels with regard to their three-year moving average. To calculate the three-year moving average from quarterly data we sum 12 quarters of data then divide by 12:

\[
\text{Average} (\mu) = \frac{70.6 + 63.11 + 58.11 + 90.54 + 95.24 + 99.70 + 108.38 + 99.66 + 101.62 + 105.34 + 109.53 + 115.78}{12} = 93.13
\]

\[
\text{Standard Deviation} (\sigma) = 18.99
\]

\[
\text{Standardized Unexp Price (SUP)} = \frac{115.78 - 93.13}{18.99} = 1.19
\]

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.
The CREF Report series is produced for the benefit of the hospitality real estate and finance industries by The Center for Real Estate and Finance at Cornell University.

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