

# Prices Have Not Caught Up to Growth in RevPAR

Crocker H. Liu, Adam D. Nowak, and Robert M. White, Jr.

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## EXECUTIVE SUMMARY

**H**otel prices are not yet reflecting the positive momentum in RevPAR. However, we expect prices for hotel properties to rise in the next quarter based on our repeat sales index. A comparison of current operating yields relative to borrowing cost suggest that hotel investors expect most of investment performance to come from capital gains when the hotel is sold rather than operating performance. We also expect a further compression in hotel cap rates going forward. However, we anticipate positive price momentum to occur in smaller hotels with moderate increases (if any) for larger hotels based on our forward looking barometers. This is report number 10 of the index series.

## Cornell Hotel Indices: First Quarter 2014:

# Prices Have Not Caught Up to Growth in RevPAR

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### Prices Are Linked to RevPAR

Starting with this issue, we revisit the year-over-year change in RevPAR relative to our Repeat Sale Index. We have not examined the co-movement between these two metrics since our inaugural issue. Now is the appropriate time to do so, since some of our readers have asked why hotel prices aren't reflecting the positive momentum in RevPAR. Exhibit 1 (overleaf) shows that the year-over-year change in RevPAR is a leading indicator of price fluctuations in hotel properties. As such, there is a delay in the information transmission to prices. We expect prices to reflect the RevPAR momentum in the next quarter.

### Hotel Investment Continues to Languish

Our economic value added (EVA) indicator shown in Exhibit 2 (also on the next page) continues to reflect lackluster operating performance. Total borrowing cost (weighted average cost of capital; also includes the cost of equity financing) continues to exceed the current hotel yield (cap rate) resulting in a negative EVA spread. A negative EVA spread indicates that return for hotel investors is coming at the back end of the project. That is, the investors will make their money when they sell the hotel due to price appreciation rather than making their money immediately.

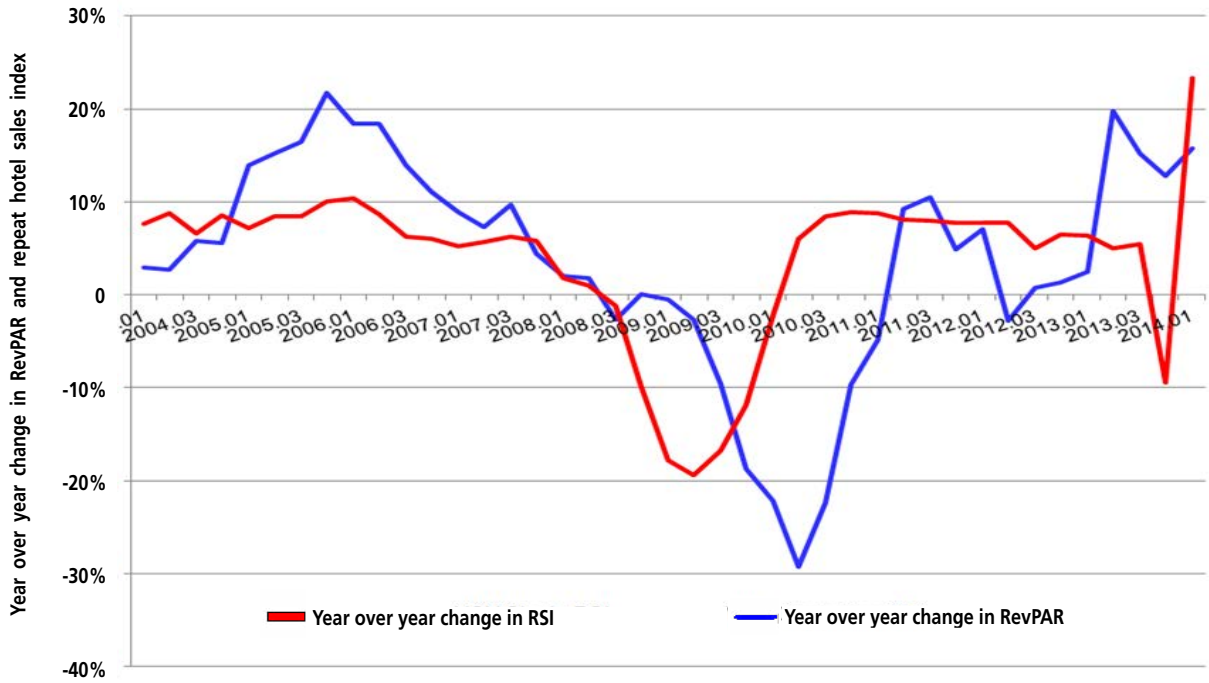
### About the Cornell Hotel Indices

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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

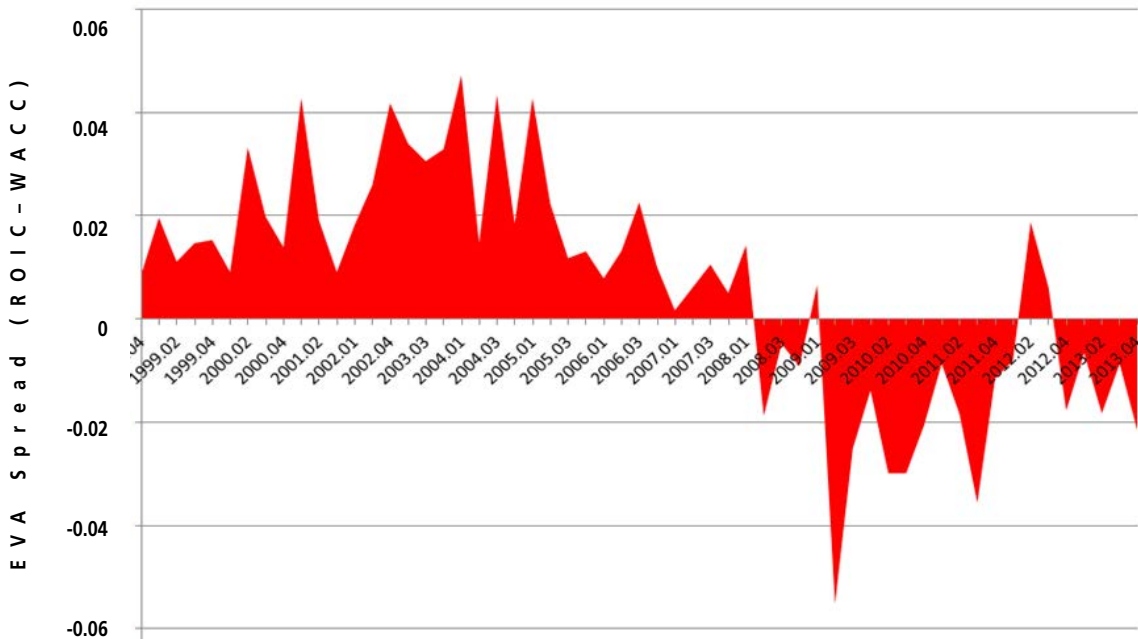
### RevPAR growth as a leading metric of growth in repeat sales



Sources: Cornell Center for Real Estate and Finance, PKF Hotel Horizons, Smith Travel Research (STR)

## EXHIBIT 2

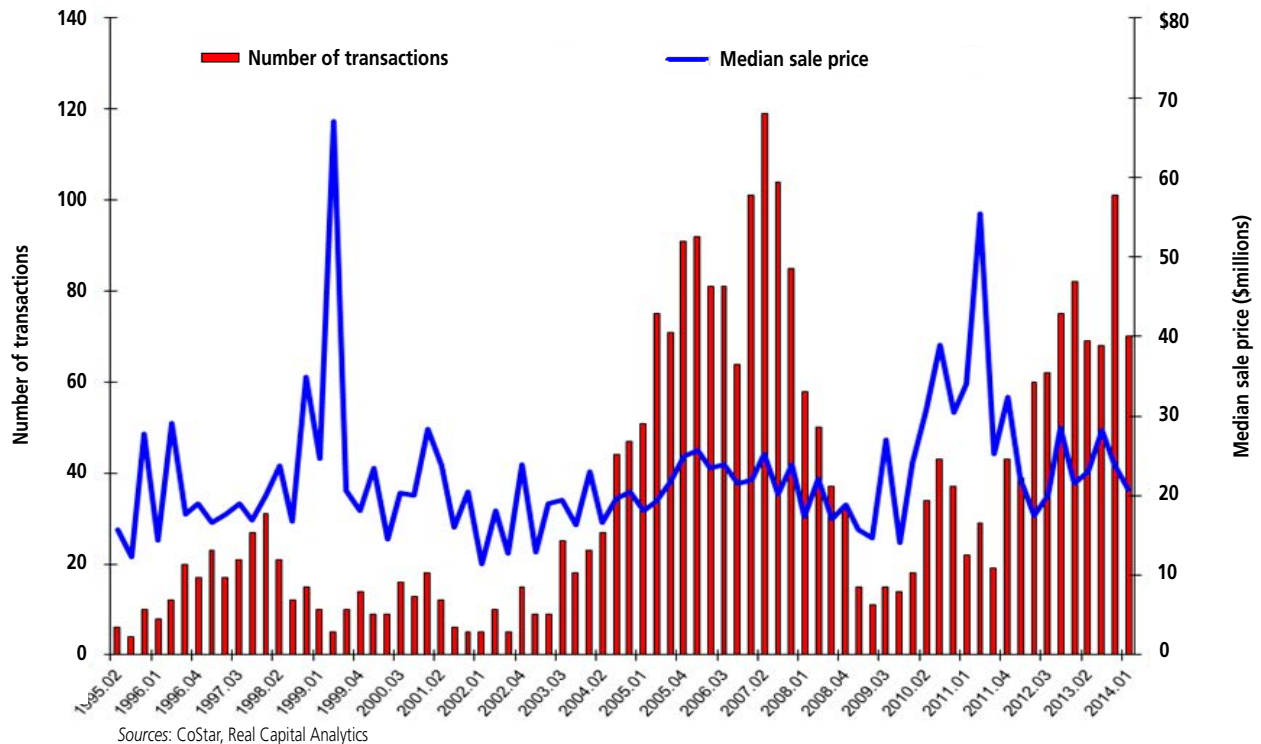
### Economic value added (EVA) for hotels



Sources: ACLI, Cornell Center for Real Estate and Finance, NAREIT, Federal Reserve

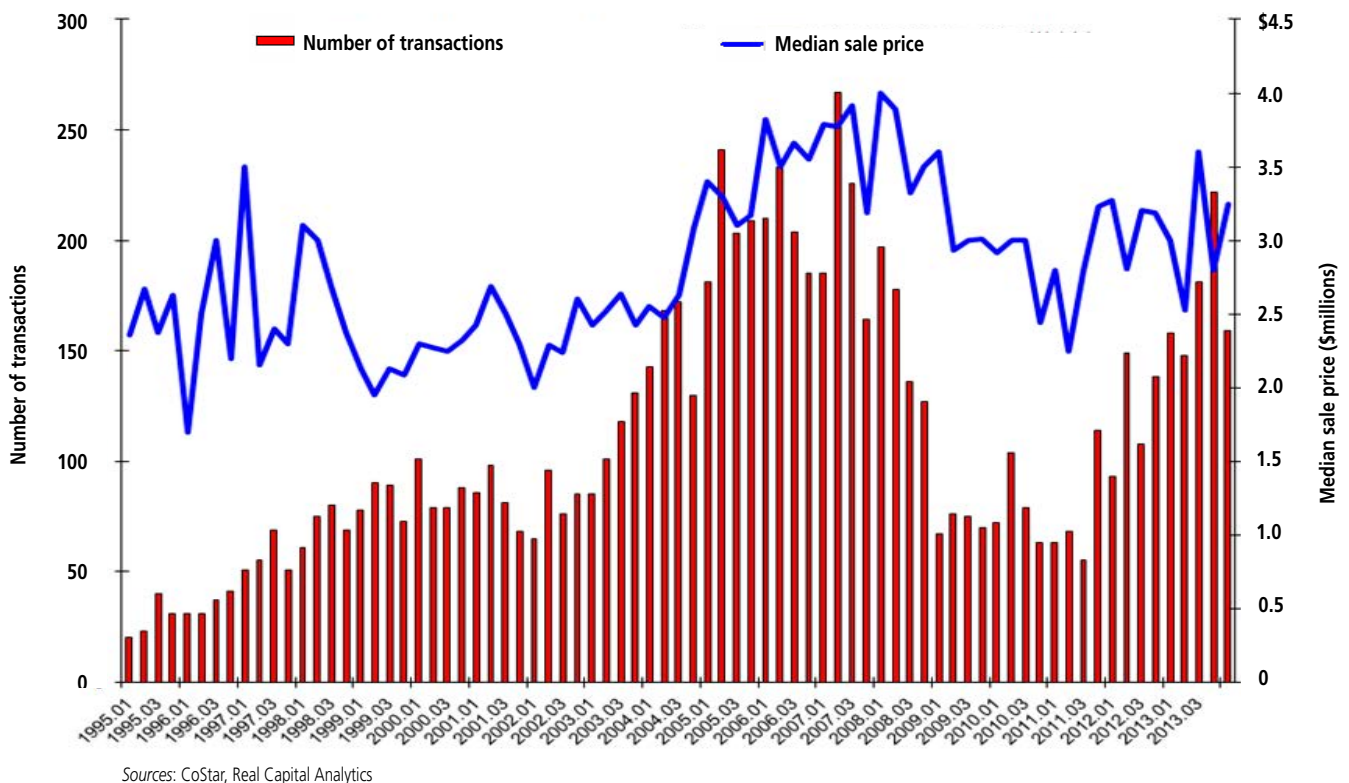
### EXHIBIT 3

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



### EXHIBIT 4

Median sale price and number of sales for small hotels (sale prices of less than \$10 million)

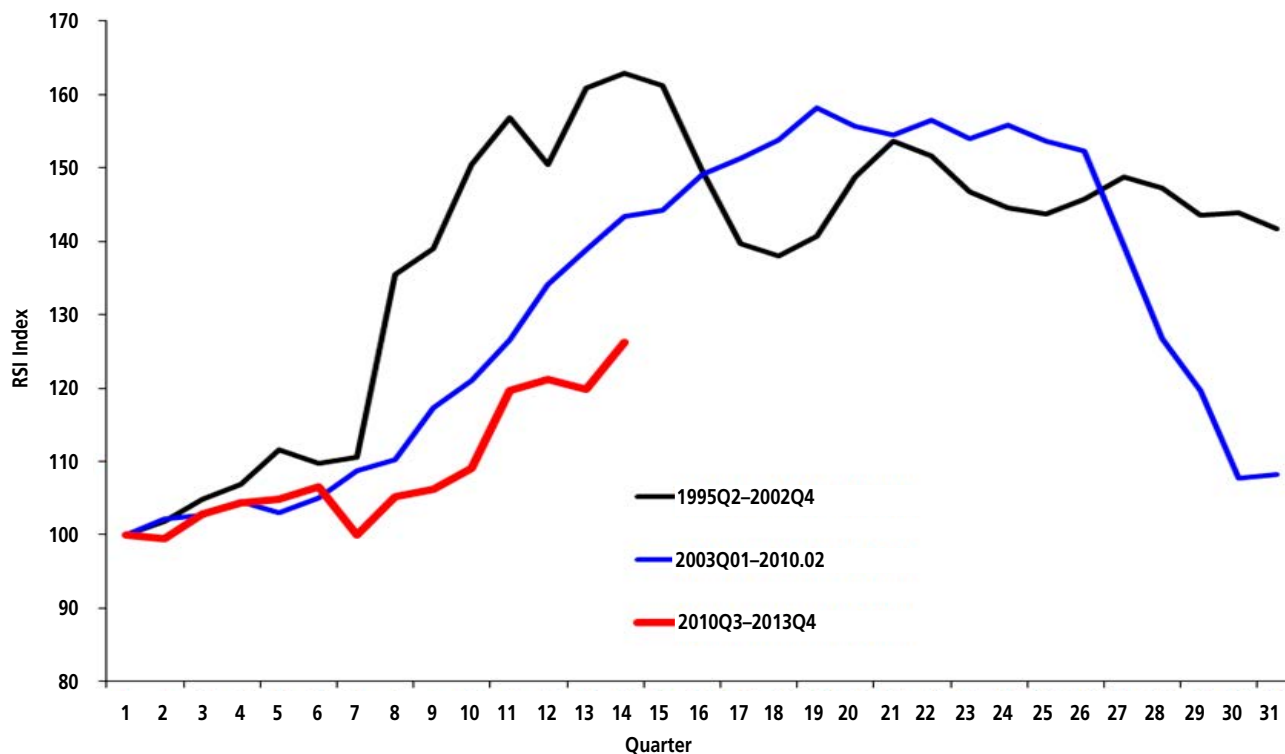




**EXHIBIT 5**
**Hotel indices through 2013, quarter 4**

	Index Value					Index Value			
	Hedonic	Hedonic	RSI	RSI		Hedonic	Hedonic	RSI	RSI
YrQtr	Low Priced Hotels (<\$10M)	High Priced Hotels (>=\$10M)	Repeat Sales Index	Index Value Repeat Sales	YrQtr	Low Priced Hotels (<\$10M)	High Priced Hotels (>=\$10M)	Repeat Sales Index	Index Value Repeat Sales
1995.02	99.832	70.198	64.24	.	2004.04	120.298	110.612	103.15	103.745
1995.03	99.858	63.135	65.393	.	2005.01	127.263	115.453	109.727	134.473
1995.04	102.317	58.146	67.339	.	2005.02	135.063	121.678	113.209	126.136
1996.01	98.212	90.537	68.694	.	2005.03	138.189	123.138	118.423	143.195
1996.02	96.225	95.421	71.65	.	2005.04	140.409	130.333	125.528	136.63
1996.03	101.361	99.982	70.548	.	2006.01	143.853	137.745	129.922	145.313
1996.04	96.096	108.557	71.012	.	2006.02	145.028	142.95	134.091	146.132
1997.01	105.747	99.984	87.03	.	2006.03	149.722	150.496	134.893	147.945
1997.02	105.485	101.816	89.313	.	2006.04	152.354	153.489	139.5	153.22
1997.03	101.664	105.456	96.678	.	2007.01	152.065	154.153	141.556	153.326
1997.04	105.262	109.685	100.81	.	2007.02	154.963	160.45	143.823	154.119
1998.01	103.618	115.935	96.628	.	2007.03	156.881	155.481	147.95	161.681
1998.02	112.487	127.162	103.36	.	2007.04	155.129	153.964	145.644	160.3
1998.03	115.03	123.695	104.62	.	2008.01	157.601	148.135	144.463	173.827
1998.04	115.766	132.958	103.63	.	2008.02	158.59	147.524	146.378	171.6
1999.01	114.06	125.828	96.124	.	2008.03	154.701	146.89	144.043	150.57
1999.02	106.008	106.105	89.787	.	2008.04	155.45	144.811	145.811	158.776
1999.03	103.437	115.922	88.681	.	2009.01	151.872	137.679	143.707	149.258
1999.04	101.781	103.667	90.346	.	2009.02	141.258	118.922	142.499	145.798
2000.01	99.76	105.729	95.529	100	2009.03	137.455	113.47	130.351	96.638
2000.02	101.301	109.423	98.71	106.914	2009.04	133.319	96.468	118.544	102.936
2000.03	100.29	102.235	97.406	88.527	2010.01	127.066	107.306	111.947	109.728
2000.04	103.391	108.761	94.336	86.646	2010.02	126.153	119.522	100.742	101.405
2001.01	106.504	122.062	92.907	95.928	2010.03	125.183	140.02	101.175	102.183
2001.02	110.228	126.33	92.342	102.32	2010.04	121.457	167.595	107.045	124.89
2001.03	112.468	121.241	93.646	101.914	2011.01	123.058	163.949	106.457	112.471
2001.04	110.31	120.085	95.609	93.402	2011.02	120.694	176.377	110.106	113.815
2002.01	107.204	108.352	94.617	108.32	2011.03	117.246	162.835	111.75	107.689
2002.02	103.369	98.277	92.277	85.107	2011.04	122.139	161.434	112.25	126.654
2002.03	103.364	95.421	92.451	94.293	2012.01	121.994	166.459	113.986	111.35
2002.04	106.207	99.973	91.052	94.222	2012.02	126.197	152.773	107.037	84.583
2003.01	108.399	101.47	93.525	99.595	2012.03	132.955	151.65	112.549	126.846
2003.02	112.375	122.014	95.609	106.325	2012.04	134.036	148.973	113.753	131.517
2003.03	115.434	128.464	96.106	102.061	2013.01	135.619	148.765	116.792	123.317
2003.04	114.838	131.694	97.739	103.715	2013.02	133.743	155.58	128.187	137.655
2004.01	116.138	131.501	96.302	104.56	2013.03	135.355	165.46	129.709	141.473
2004.02	115.826	114.432	98.22	113.634	2013.04	133.827	166.332	128.358	140.827
2004.03	115.998	119.331	101.73	117.523	2014.01	134.988	165.19	135.209	164.571

### Comparison of hotel real estate cycles using repeat sales



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

### Hotel Transaction Volume Has Declined Along with Median Price

The total volume of hotel transactions declined in the first quarter. Year over year, the hotel transaction volume decreased by 4.6 percent (2013Q1 to 2014Q1), while it declined 29.1 percent on a quarter-over-quarter basis (2013Q4 to 2014Q1). The volume of large hotel transactions fell 30.7 percent while small hotel transaction volume fell by 28.4 percent from the previous quarter.<sup>1</sup> The transaction volume for large hotels fell almost 15 percent on a year over year basis; small hotel transaction volume in contrast remained relatively flat with a year-over-year growth rate of .6 percent. The median price for large hotels declined 3.5 percent, while the median price for small hotels rose 8.3 percent on a year-over-year basis. A similar situation existed on a quarter-over-quarter basis (-13.5% versus +16.1%). Exhibit 3 shows the negative trend in the number of transactions and median price for large hotels. In contrast, Exhibit 4 shows that although the number of transactions for small hotels also declined, the median sale price increased.

<sup>1</sup> The number of transactions is limited to the sales that are included in the hedonic index. As such, it should not be construed as being the total market activity.

### Déjà vu All Over Again (Again)

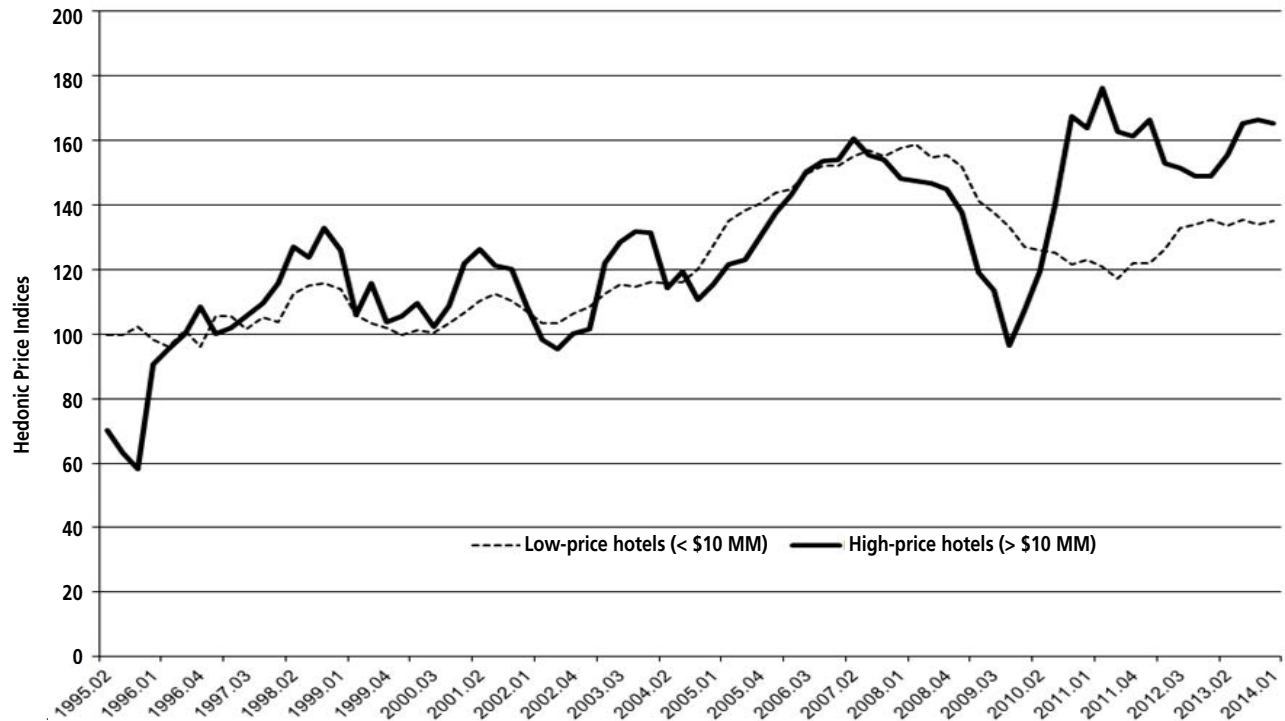
Hotel prices continue to behave in a similar manner relative to the 1995Q2 to 2002Q4 cycle based on repeat sales. Exhibit 5 provides the price index for the repeat hotel sales used to construct our RSI cycle analysis in Exhibit 6 together with the hedonic price indices for small and large hotels. Exhibit 6 confirms our expectations based on cycle analysis; we had anticipated a positive trend for the first quarter of 2014. We expect this positive trend to continue through the second quarter of 2014.

### Prices of Large and Small Hotels Are Starting to Converge

As shown on the next two pages, Exhibit 7 shows that prices for the large-hotel and small-hotel indices are starting to converge. The prices of large hotels dipped slightly, while the prices of small hotels continue to remain relatively flat. However, Exhibit 8 shows that the large hotel index continues to remain above both its three-year and five-year moving average signaling a continued “buy.” Exhibit 9 provides further confirmation that the large-hotel index continues to rise on a year-over-year basis. Exhibit 10 shows that the current price for smaller hotels has remained relatively constant, with the index’s three-year moving average converging with its five-

## EXHIBIT 7

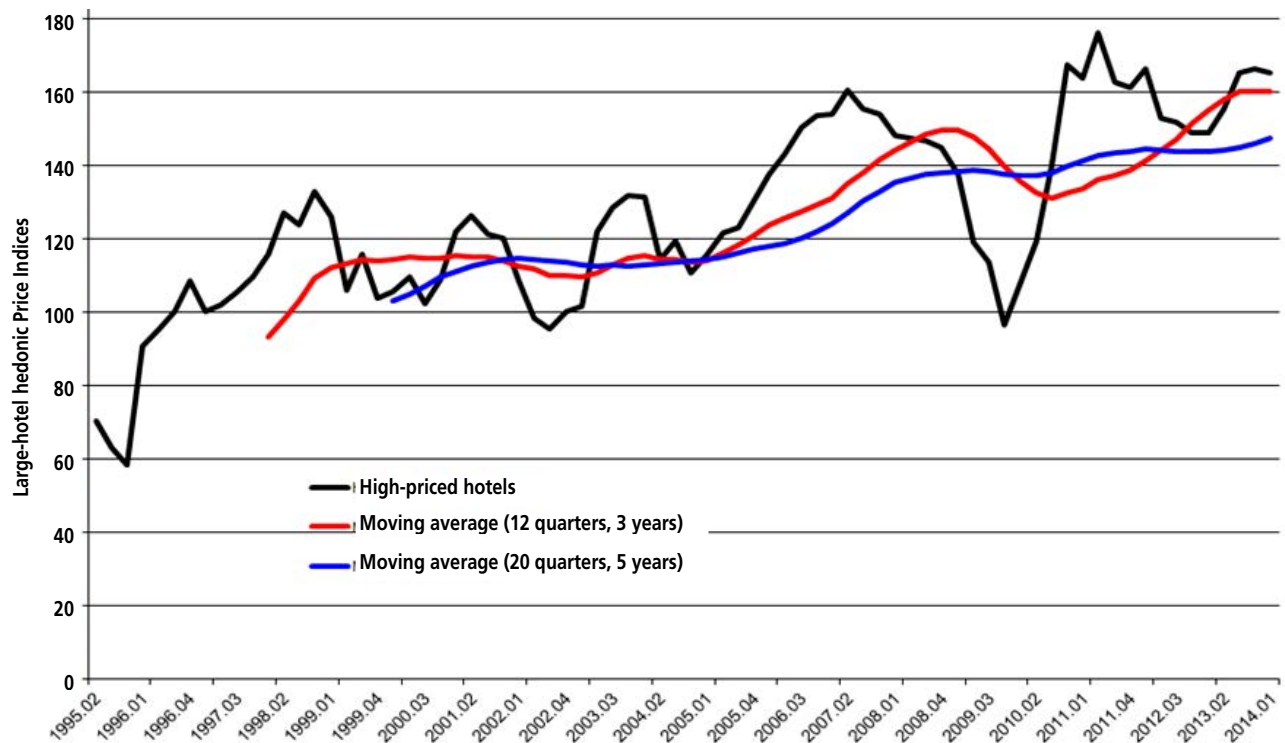
### Hedonic hotel indices for large and small hotel transactions



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

## EXHIBIT 8

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

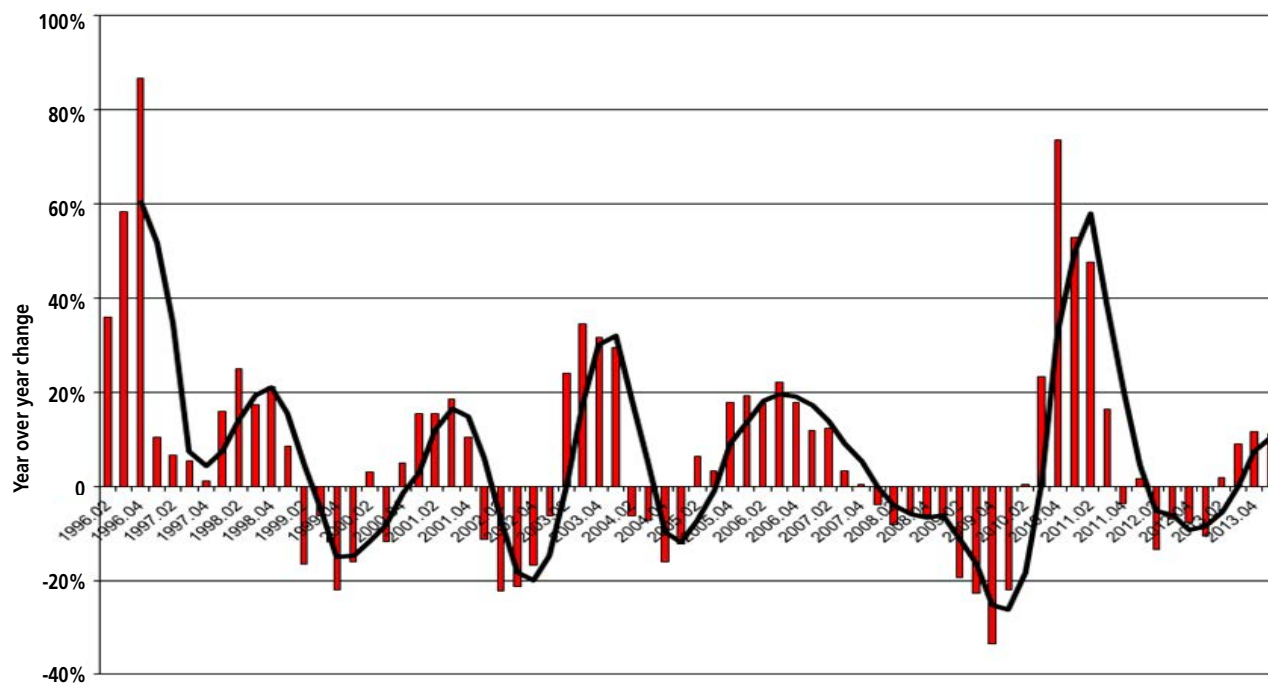


Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics



## EXHIBIT 9

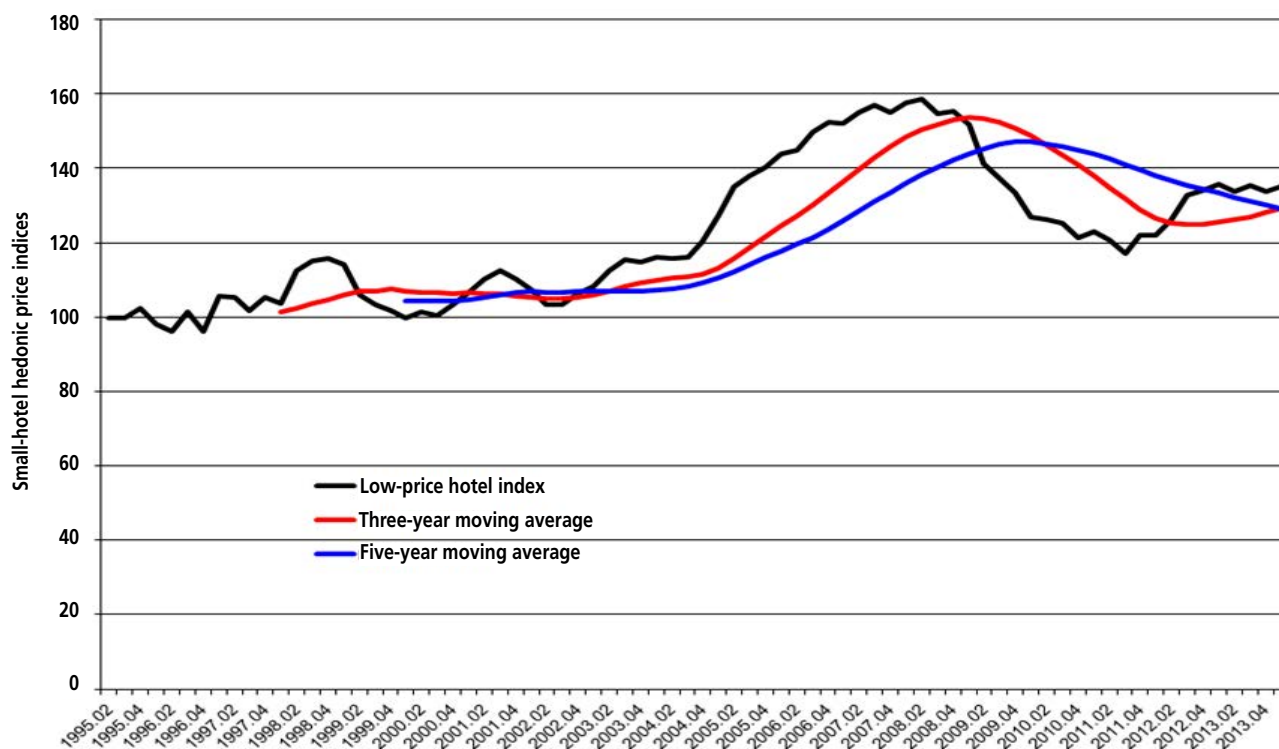
Year-over-year change in large-hotel index, with moving-average trendline



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

## EXHIBIT 10

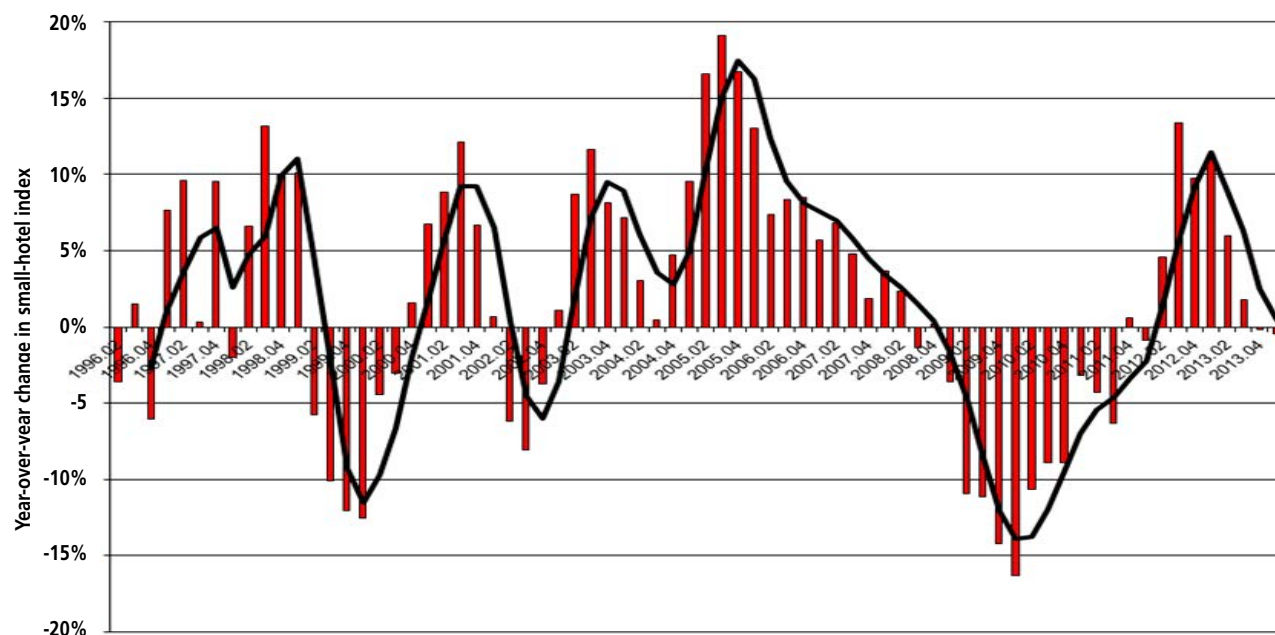
Small hotel index, with three-year and five-year moving averages



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



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



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

year moving average. While these trends seem to indicate that no problems exist for small hotels, we are concerned for the following reason. Exhibit 11 reveals that year-over-year growth in the price of small hotels has continued to decline since the first quarter of 2013.

### Repeat Sales Are Trending Upwards

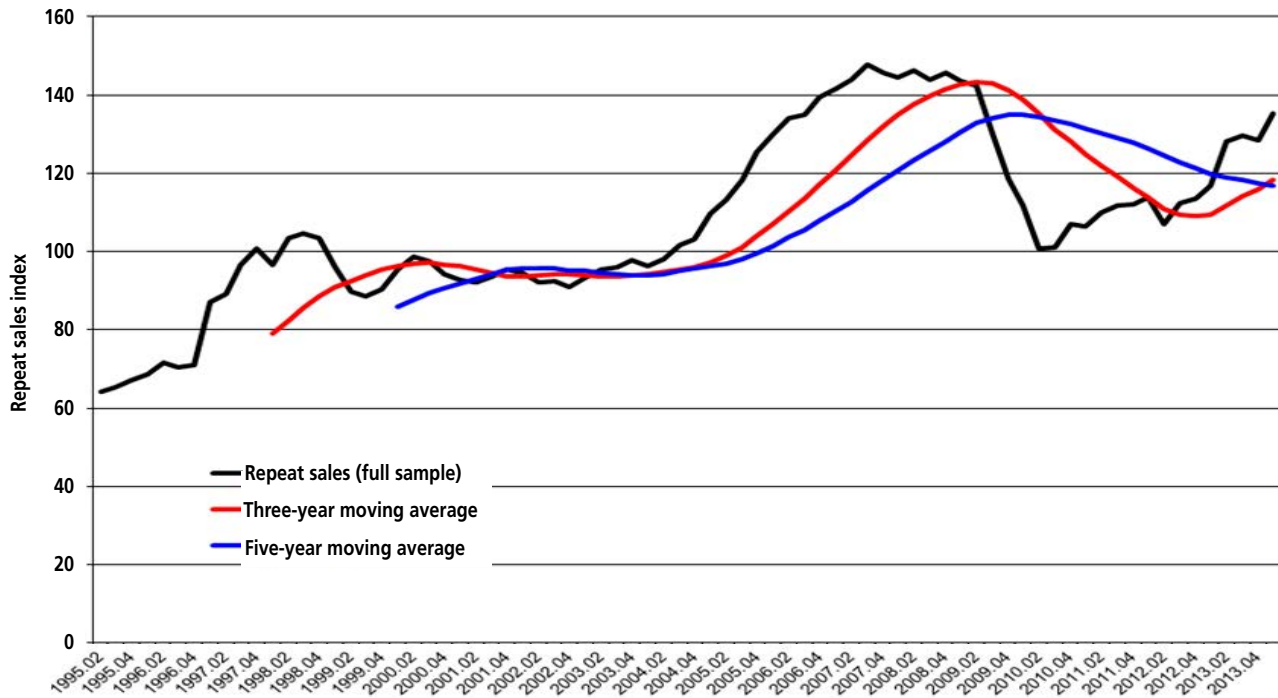
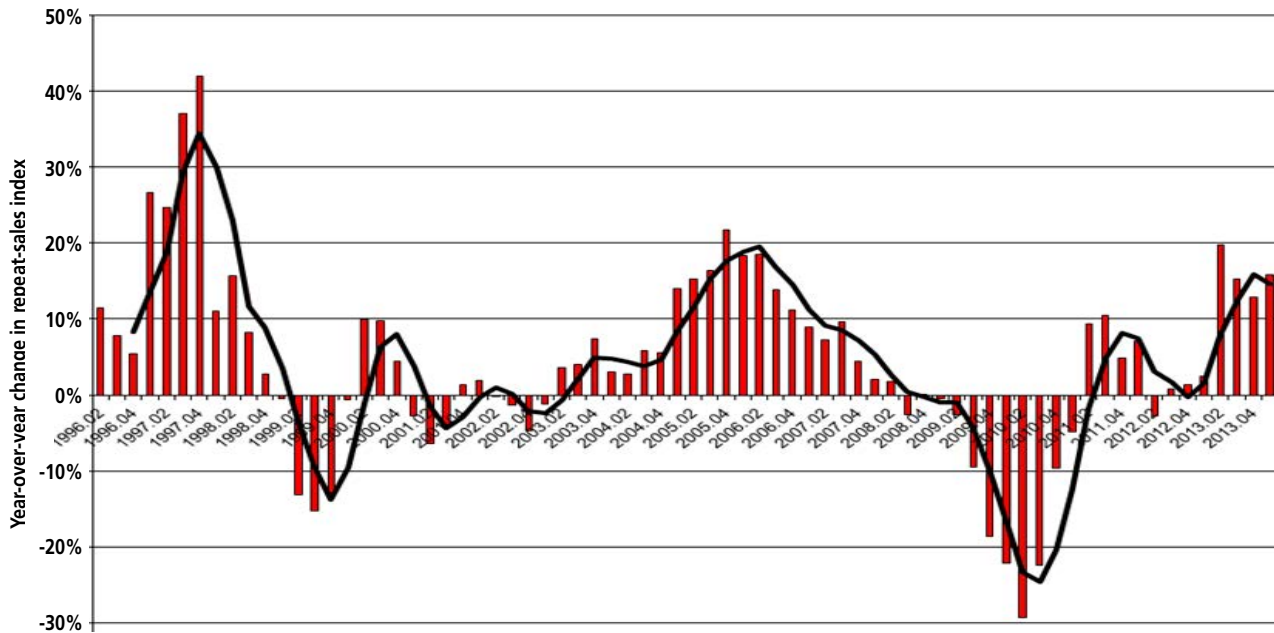
The repeat sale index based on the full sample of hotels (in Exhibit 12, next page) echoes a story similar to that of large hotels, although the momentum is more positively pronounced.<sup>2</sup> The current repeat sale index (full sample) of 135.21 (2014Q1) is above the previous quarter's (2013Q4) index of 128.36, as well as above the previous year's index of 116.79 (2013Q1). In percentage terms, the repeat hotel sale index rose 15.8 percent on a year over year basis (2014Q1 to

2013Q1) and also increased 5.3 percent on a quarterly basis (2013Q4 to 2014Q1). Exhibit 13 provides an alternative perspective of this positive price momentum in the repeat sales.

### Cap Rates Start to Decline

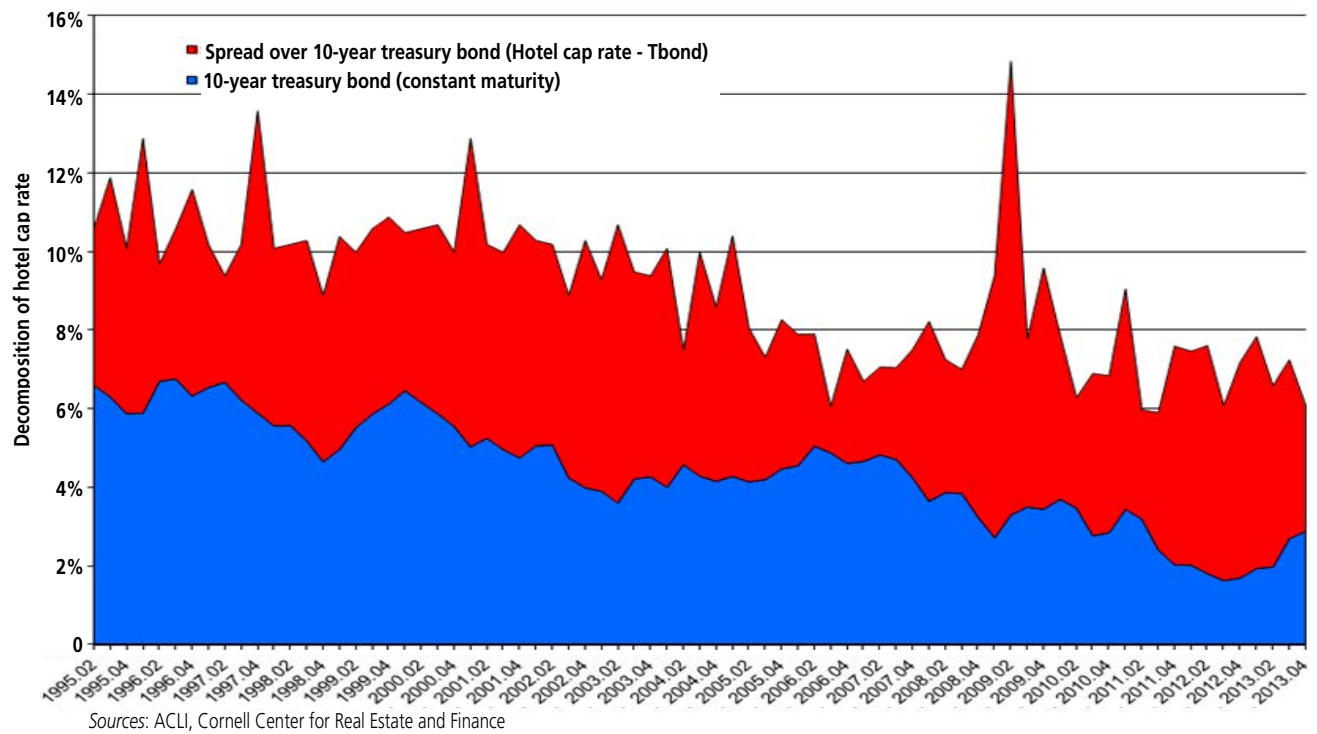
For the fourth quarter of 2013, the latest quarter for which ACLI reports data on hotel cap rates, cap rates have declined from 7.3 percent in 2013Q3 to 6.1 percent in 2013Q4. This compression in hotel cap rates is consistent with the positive price trend in the last quarter. Exhibit 14 (two pages over) shows that although the rate on the 10-year Treasury bond (constant maturity) rose slightly, from 2.71 percent to 2.9 percent, the hotel cap rate spread over the 10-year treasury fell to 3.2 percent. This suggests that investors are pricing hotels at a lower risk premium due to lower anticipated risk from investing in this asset class. We expect a continued compression in the ACLI cap rate in 2014Q1 (noting that ACLI reports cap rates one quarter behind our report) based on the relationship with prices and RevPAR in Exhibit 1 and our cycle analysis in Exhibit 6.

<sup>2</sup> 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. This means that the 100-base index thus doesn't use information on sales prior to the first quarter of 2000, even if a subsequent sale took place after 2000. Hotels that had recorded a sale before 2000 are included in the full index.

**EXHIBIT 12****Hotel repeat-sale index (full sample), three-year moving average, and five-year moving average****EXHIBIT 13****Year-over-year change in repeat-sale index, with moving-average trendline**

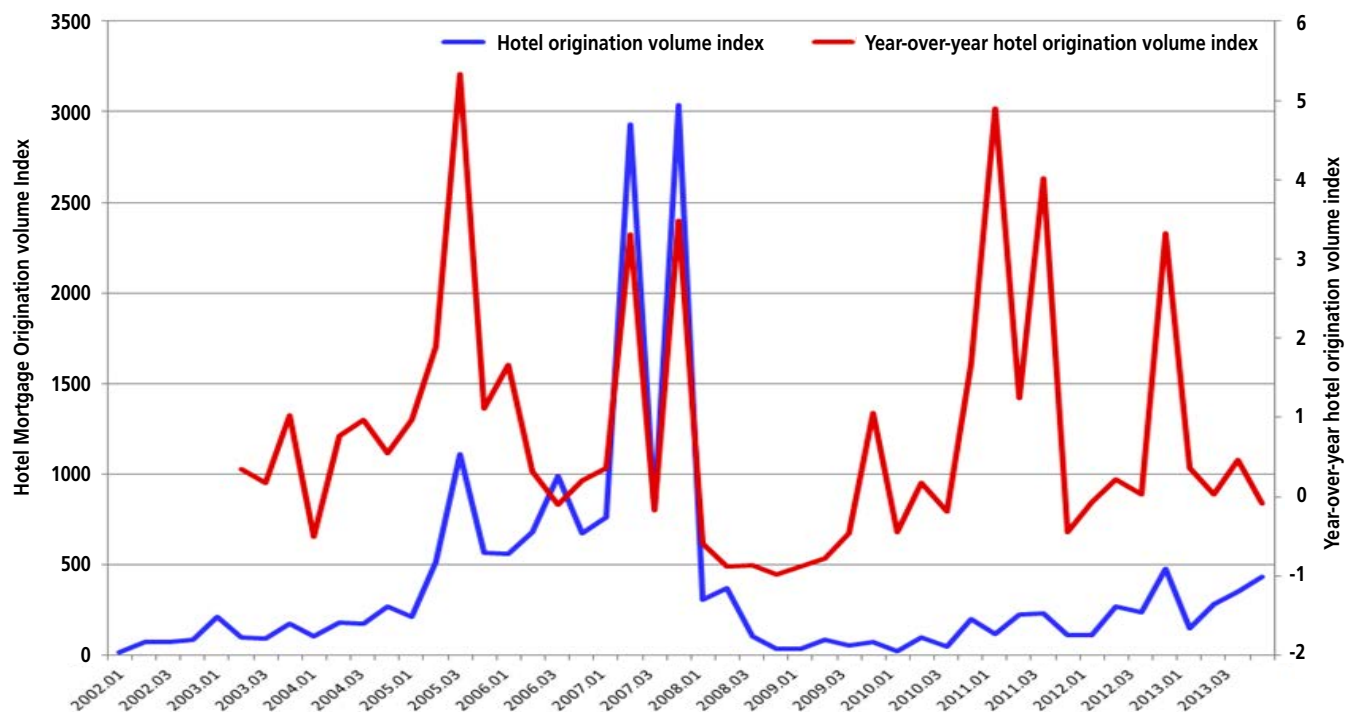
# EXHIBIT 14

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



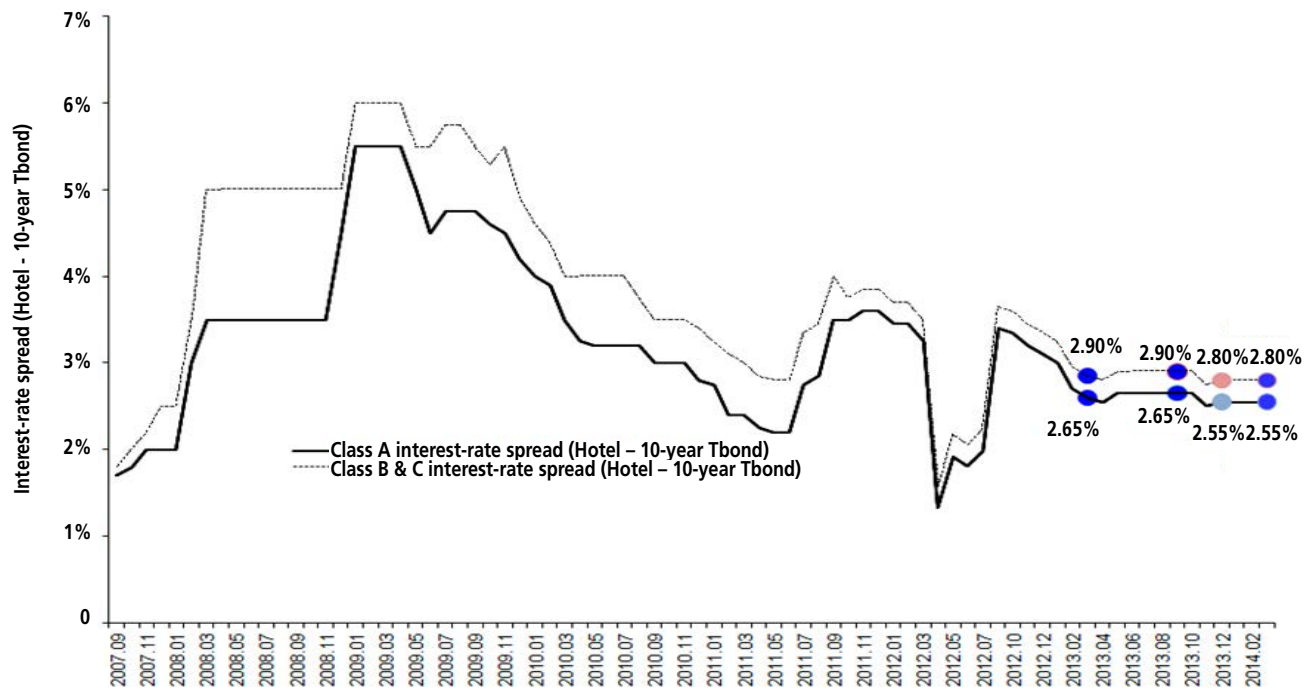
# EXHIBIT 15

## Mortgage origination volume for hotels



## EXHIBIT 16

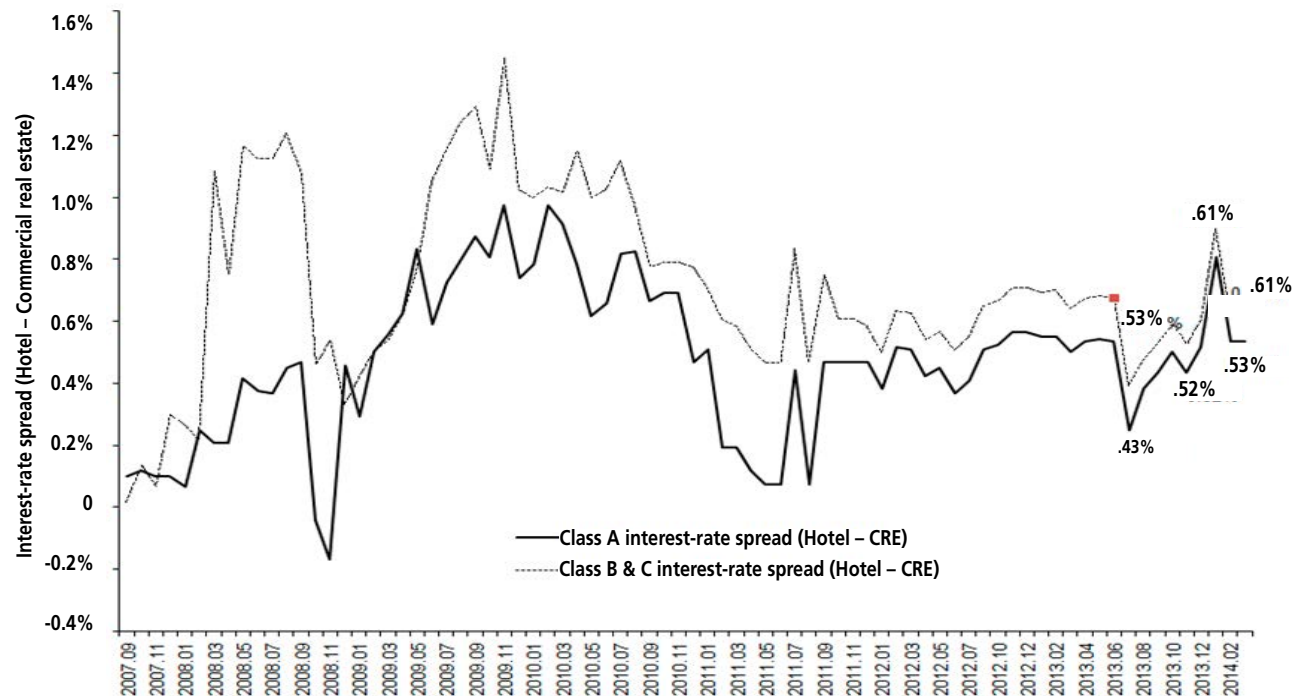
### Interest-rate spreads of hotels versus U.S. Treasury ten-year bonds



Sources: Cushman Wakefield Sonnenblick Goldman

## EXHIBIT 17

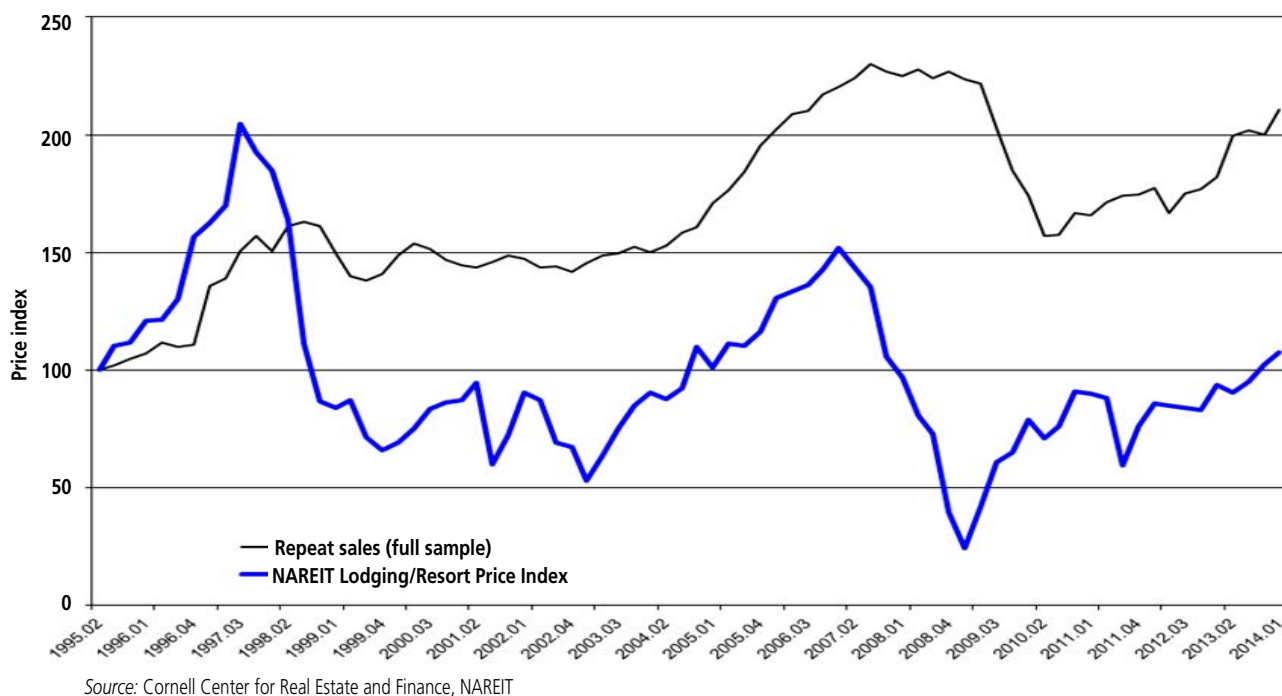
### Interest-rate spreads of hotels versus non-hotel commercial real estate



Source: Cushman Wakefield Sonnenblick Goldman



## Hotel repeat sales index versus NAREIT lodging/resort price index



### Mortgage Financing: Volume Increases, Cost Diminishes

Exhibit 15 shows that the mortgage origination volume for hotels increased by almost 24 percent in the fourth quarter continuing the trend from the prior quarter (25% in 2013Q3). However, the level of loan origination volume was 9-percent less than the previous year (2012Q4). The cost of obtaining hotel financing declined from 2013Q4 while the interest rate spread remains stationary. The interest rate on Class A full-service hotels, which was 5.39 percent as of December 2013, is at 5.26 percent as of March 2014. For Class B full-service hotels, the December 2013 figure was 5.64 percent and the March 31 figure is 5.51 percent. Exhibit 16 and Exhibit 17 depict interest rate spreads relative to different benchmarks. Exhibit 16 shows the spread between Class A (B&C) interest rates on full-service hotels over the ten-year Treasury bond. Exhibit 17 shows the hotel real estate premium, which is the spread between the interest rate on Class A (B&C) full-service hotels over the interest rate corresponding to non-hotel commercial real estate.<sup>3</sup> The

<sup>3</sup> 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.

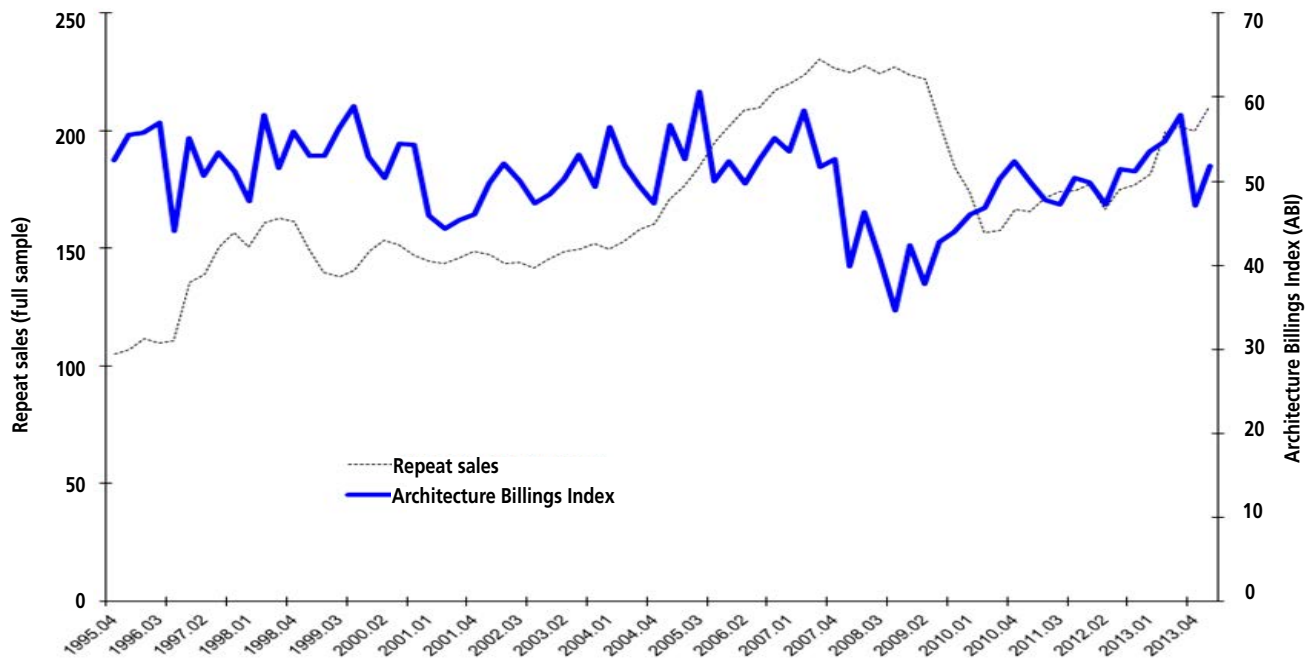
hotel real estate premiums for both higher quality (.53%) and lower quality (.63%) hotels have increased relative to the previous quarter (.52% for Class A, and .61% for B&C). The slight increase in the premium in Exhibit 17 is a signal that the perceived default risk for hotel properties has increased relative to the four major commercial real estate property types in the first quarter of 2014.

### Tea Leaves' Prediction: Expect the Price of Large Hotels to Moderate while Small Hotels Pick up the Pace

Exhibit 18 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 that have found 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 has continued its forward momentum, rising 5 percent this quarter (after a 7.5-percent increase in the prior quarter). The architecture billings index (ABI) for commercial and industrial property, which represents another forward looking metric, also rose (10%) as shown

## EXHIBIT 19

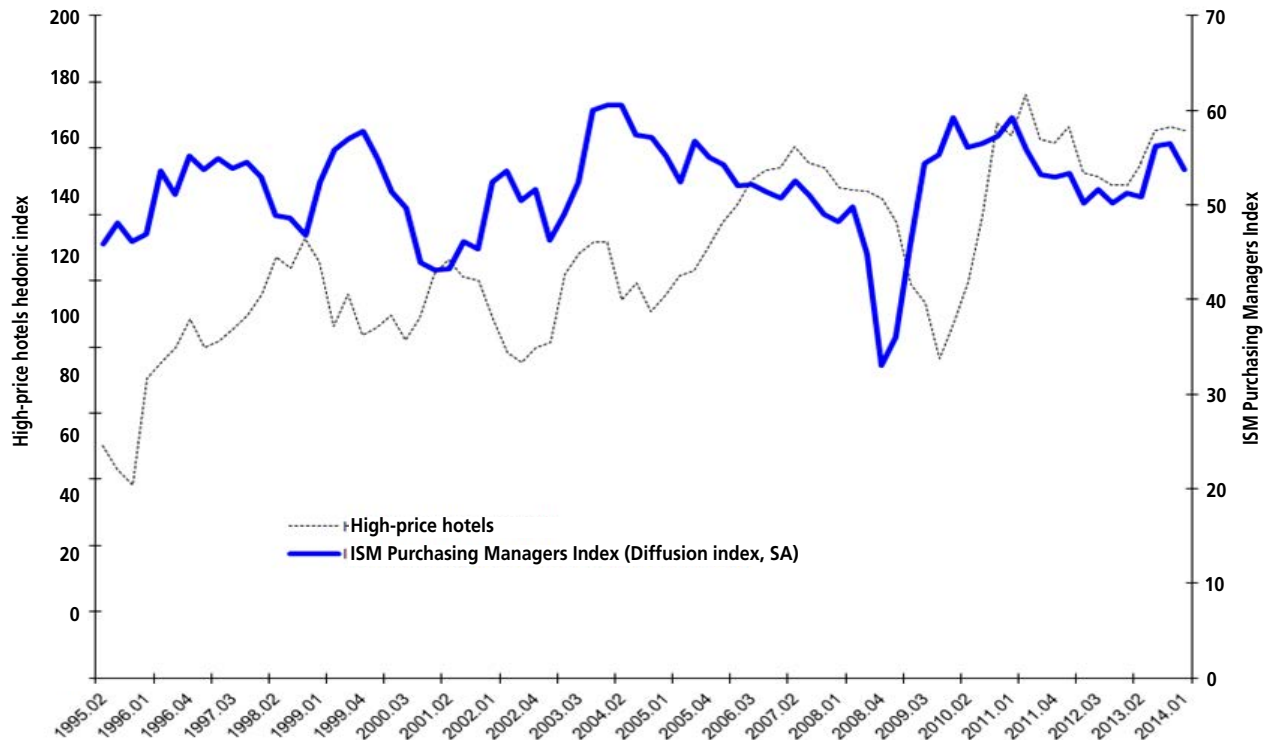
### Hotel repeat sales index versus architecture billings index



Sources: Cornell Center for Real Estate and Finance, American Institute of Architects

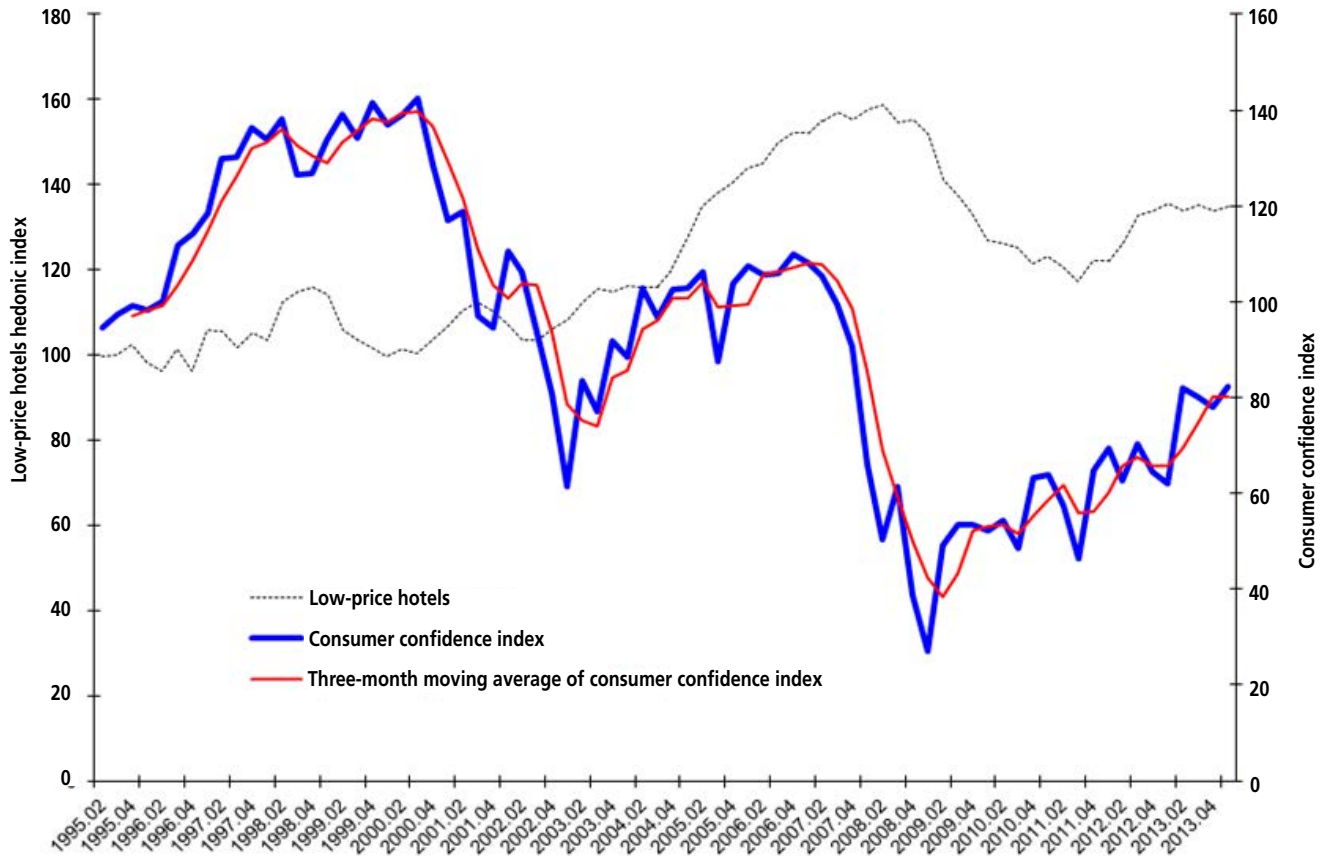
## EXHIBIT 20

### Business confidence and high-price hotel index



Sources: Cornell Center for Real Estate and Finance, Institute for Supply Management (ISM)

## Consumer confidence and low-price hotel index



Sources: Cornell Center for Real Estate and Finance, Conference Board

in Exhibit 19.<sup>4</sup> In contrast to these indicators, as shown in Exhibit 20, the National Association of Purchasing Managers (NAPM) index,<sup>5</sup> which is an indicator of anticipated

<sup>4</sup> We used the May ABI index as reported on June 19, 2013 since the June ABI index will be reported after the writing of this report. The ABI anticipates non-residential construction activity by approximately 9-12 months. According to material posted on their website, "The indexes are developed from the monthly Work-on-the-Boards survey panel where participants are asked whether their billings increased, decreased, or stayed the same in the month that just ended. According to the proportion of respondents choosing each option, a score is generated, which represents an index value for each month." [www.aia.org/practicing/economics/aia076265](http://www.aia.org/practicing/economics/aia076265).

<sup>5</sup> 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.

business confidence and thus business traveler demand, reversed directions and turned down this quarter to 53.7 (a drop of approximately 5%), although this level is still above 50, which is the cut-off point between growth and contraction. Although we anticipate that the price of large hotels should moderate, we see both the NAREIT index and the ABI showing a positive trend for the next quarter.

The Consumer Confidence Index from the Conference Board (Exhibit 21), 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 (<\$10 million), rose slightly in March. Consumer confidence increased nearly 33 percent on a year-over-year basis (2013Q1 to 2014Q1) this quarter, which is a larger increase than the 21 percent rise year over year in the prior quarter (2012Q4 to 2013Q4). We anticipate an upward trend in the transaction price for low priced hotels based on the year-over-year trend. ■

### *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 elsewhere on the CREF website.

### *About the Cornell Center for Real Estate and Finance*

The Center for Real Estate and Finance (CREF) was established in 2009 to provide a platform for educating students, creating new knowledge through research activities, and exchanging information about real estate and finance with a broad set of audiences. Building on a long-standing tradition of quality research in the hospitality industry, growth of the CREF faculty places the School of Hotel Administration at the forefront of research in all areas of commercial real estate, from the study of the behavior of real estate assets in investment portfolios to an understanding of real estate capital markets to the science of hedging real estate risk. CREF faculty serve as editors and editorial board members of the most prestigious journals in the field and publish regularly in the real estate and finance press.



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Center for Real Estate and Finance Reports,  
Vol. 3, No. 2 (April 2014)

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**Crocker H. Liu, Ph.D.**, is a professor of real estate at the School of Hotel Administration at Cornell where he holds the Robert A. Beck Professor of Hospitality Financial Management. He previously taught at New York University's Stern School of Business (1988-2006) and at Arizona State University's W.P. Carey School of Business (2006-2009) where he held the McCord Chair. His research interests are focused on issues in real estate finance, particularly topics related to agency, corporate governance, organizational forms, market efficiency and valuation. Liu's research has been published in the *Review of Financial Studies*, *Journal of Financial Economics*, *Journal of Business*, *Journal of Financial and Quantitative Analysis*, *Journal of Law and Economics*, *Journal of Financial Markets*, *Review of Finance*, *Real Estate Economics* and the *Journal of Real Estate Finance and Economics*. He is currently the co-editor of *Real Estate Economics*, the leading real estate academic journal and is on the editorial board of the *Journal of Property Research*. He also previously served on the editorial boards of the *Journal of Real Estate Finance and Economics* and the *Journal of Real Estate Finance*. Liu earned his BBA in real estate and finance from the University of Hawaii, an M.S. in real estate from Wisconsin under Dr. James Graaskamp, and a Ph.D. in finance and real estate from the University of Texas under Dr. Vijay Bawa.

**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.

### Acknowledgements

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

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