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EFFECTS OF MAJOR RENOVATIONS ON HOTEL MARKET PENETRATION AND NET PRESENT VALUE

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INTRODUCTION OF TOPIC AND IMPORTANCE

When conducting a valuation on a hotel asset, the appraiser analyzes the local lodging market, researches the area's economics, and prepares a forecast of income and expenses, which is dependent on the appraiser's forecast of occupancy and rate for the subject property.

On a typical appraisal, the forecast of occupancy and average rate for the subject property is supported by historical supply and demand trends in the submarket being studied, as well as the appraiser's knowledge and expertise of micro- and macroeconomic lodging trends.

The forecast of occupancy and average rate becomes more challenging when the property in question has recently undergone a major renovation or is expected to undergo a major renovation, because the appraiser not only has to forecast occupancy and rate for the market and the subject property, but must also forecast any above-average increases to the subject property's occupancy and rate that will result in increased market penetration.

Research into this topic has revealed that there are no publications that attempt to accurately understand and quantify the effect of renovations, or lack thereof, on the performance of hotels. This circumstance is likely a factor of lack of data or consistency across available data, as in order to understand the effect of renovations on performance, one must analyze a large selection of hotels with similar characteristics.

In this article, we will seek to understand and quantify, through analysis, the impact of a major renovation on a hotel's occupancy and rate penetration, and ultimately the effect on income and net present value. This research will seek to yield a more accurate framework for the forecast of occupancy and rate.

METHODOLOGY

In order to accomplish the aforementioned objective, the research will include a selection of hotels with sufficient historical occupancy and average rate data. Within the larger selection, one subset of hotels will have undergone a renovation requiring a capital expenditure significantly greater than what would normally be covered by a standard reserve for replacement.

The historical occupancy and average rate of all hotels will be presented. Additionally, the resulting occupancy and average-rate penetration levels, when compared to their respective competitive sets, will be studied to determine the level of improvement experienced following a major renovation. These data will be compiled and analyzed to explain any differences and allow appraisers to better forecast changes to a hotel's market penetration following a major renovation.

Lastly, changes in net operating income for the selected group of hotels will also be studied in order to quantify any increases following the major renovation. A discounted-cash-flow analysis will be completed and compared to the cost of renovation to further comprehend the impact of capital improvements on net present value.

PENETRATION ANALYSIS

OVERVIEW OF SELECTED HOTELS

The selected group of hotels comprises 46 limited-service, extended-stay properties located across the United States. Following a review of many hotel assets and previously completed hotel appraisal studies, the 46 properties were chosen because they are owned and operated by the same ownership group and share a similar product type and branding affiliation—Homewood Suites by Hilton or Residence Inn by Marriott. As can be expected, consistency in as many factors as possible helps to eliminate the potential for discrepancies in the analysis resulting from other factors.

Most important to the analysis is the fact that the 46 hotels include 18 properties that underwent a major renovation in 2008 and 2009, while the remaining assets did not undergo a renovation during this time.

SCOPE OF RENOVATIONS

It is important to consider a major renovation as a capital expenditure significantly above that of what would normally be covered by the hotel's traditional reserve for replacement. The International Society of Hospitality Consultants (ISHC) undertook a major industry-sponsored study of the capital expenditure requirements for full-service/luxury, select-service, and extended-stay hotels. The most recent findings of the study were published in a report in 2007.[1] Historical capital expenditures of well-maintained hotels were investigated through the compilation of data provided by most of the major hotel companies in the United States. A prospective analysis of future capital expenditure requirements was also performed based upon the cost to replace short- and long-lived building components over a hotel's economic life. The study showed that the capital expenditure requirements for hotels vary significantly from year to year and depend upon both the actual and effective ages of a property. The results of this study showed that hotel lenders and investors require reserves for replacement ranging from 4% to 5% of total revenue.

We note that 46 hotels in our selection achieved a combined occupancy and rate of 74.3% and $114.9 in 2007, prior to the start of renovations for the subset of 18 hotels that were renovated from 2008 through 2009. By calculating total revenue for all 46 hotels, we are able to arrive at the estimate of annual reserve for replacement amount for the average hotel in our selection. This calculation is presented below. We note that other revenue has been estimated based on industry averages supported by Smith Travel Research's annual U.S. Hotel Operating Statistics Study (HOST Report). The 2009 HOST Report illustrates that, in 2007, other revenue for chain-affiliated, limited-service hotels totaled approximately 3.3% of total revenue.

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[1] The International Society of Hotel Consultants, *CapEx 2007, A Study of Capital Expenditure in the U.S. Hotel Industry*.

FIGURE 1 RESERVE FOR REPLACEMENT CALCULATION

Average Number Of Rooms	126		
2008 Occupancy	72.7	%	
2008 Rate	$115		
Rooms Revenue	$3,851,922	96.7	%
Other Revenue*	130,000	3.3	%
	$3,981,922		
Reserve for Replacement	$159,277	4.0	%
Per Available Room	$1,264		

**Other Revenue Estimate based on 2009 STR U.S. Host Study*

The calculation above shows an estimated annual reserve for replacement of approximately $1,264 per room. In contrast, hotels in our selection that underwent a renovation had an average capital expenditure of $19,937 per room, with a range of $11,057 to $30,677, illustrating the scale of the renovations compared to the standard maintenance that would be expected on an annual basis.

REVPAR TRENDS

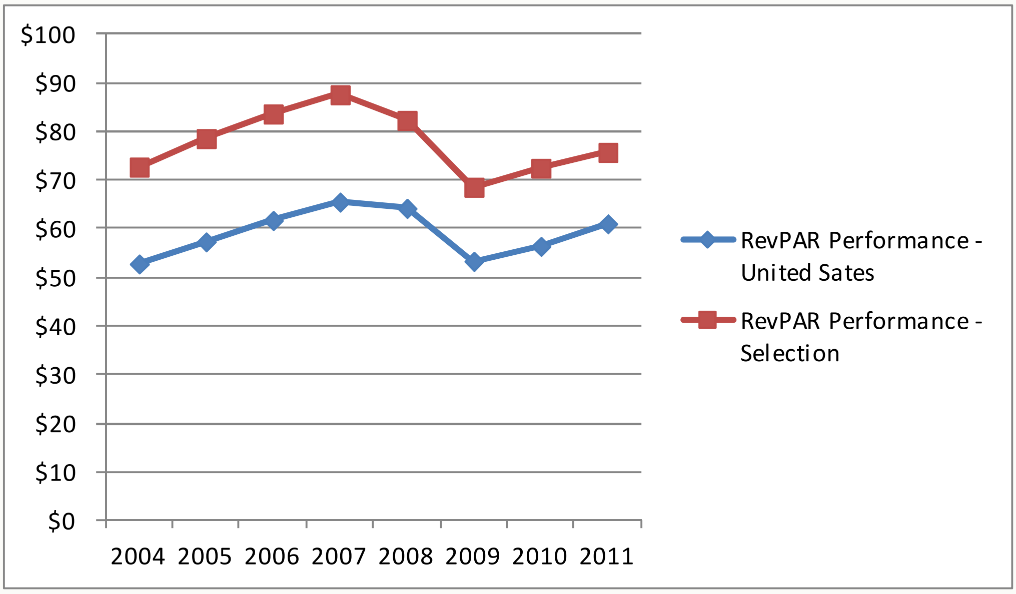
RevPAR, or Revenue Per Available Room, is an excellent performance measure for hotels, as it is calculated by multiplying the hotel's average rate by its occupancy; thus, it considers the two most important measures of hotel performance.

The following chart and graph serve to illustrate the RevPAR performance of the 46 hotels in our selection compared to the national average.

FIGURE 2 REVPAR TRENDS

Selection of 47 Hotels	$72.71	$78.58	$83.63	$87.58	$82.31	$68.58	$72.50	$75.73
United States	$52.81	$57.36	$61.76	$65.53	$64.22	$53.35	$56.43	$61.06

FIGURE 3 REVPAR TRENDS – GRAPH



As shown, the selected group of 46 hotels performed above the national average during the historical period shown. A factor influencing this trend is that the selected group of hotels comprises limited-service, extended-stay hotels affiliated with well-known brands such as Homewood Suites by Hilton and Residence Inn by Marriott. Typically, extended-stay hotels tend to perform higher than average in terms of occupancy because the length of stay tends to be longer, often spanning seven to thirty days. Additionally, brand affiliations such as Hilton and Marriott, two of the better-known brands in the nation, also help to elevate the positioning of the properties, allowing hotel managers to command a higher average rate.

Figure 3 illustrates that although the 46 hotels performed above the national average, the rate of RevPAR growth and decline over the historical period mirrored that of the national average, indicating that the hotel selection, as a whole, performed in line with the national average. However, it should be noted that some of the hotels in the selection underwent renovations during that time, while others did not. Therefore, to understand the effects of a renovation on hotel performance, it is crucial to analyze each hotel's market penetration compared to its respective competitive set.

MARKET PENETRATION EXPLANATION

A property's market penetration serves to compare the performance of that property against its competitive set. The penetration rate is the ratio of a property's market share to its fair share. The example provided below will help to illustrate overall market penetration. A market has three existing hotels with the following operating statistics:

FIGURE 4 PENETRATION EXAMPLE

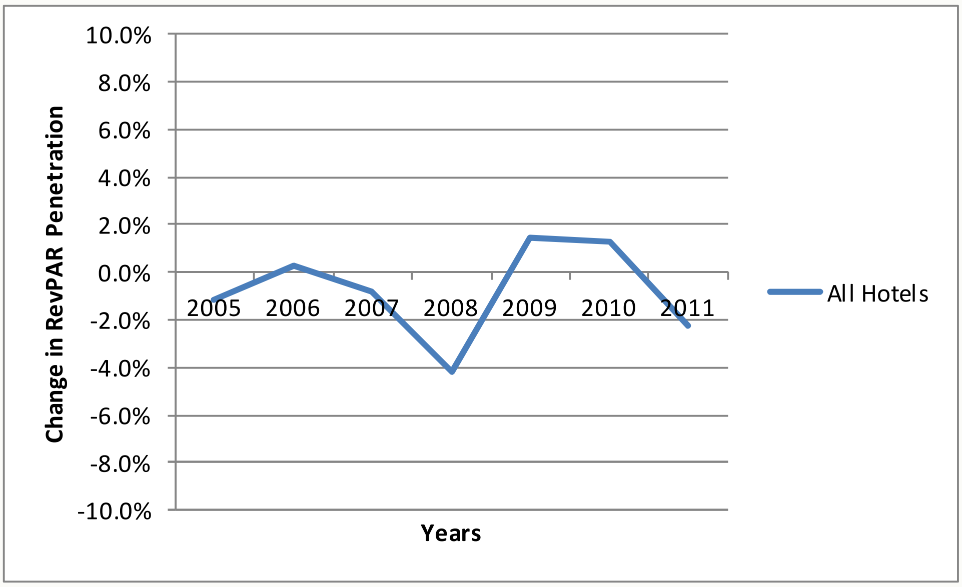
Property	Number of Rooms	Fair Share	Occupancy	Annual Occupied Room Nights	Fair Share of Occupied Room Nights	Penetration
Hotel A	50	17 %	50.0 %	9,125	11,558	78.9 %
Hotel B	100	33	60.0	21,900	23,117	94.7
Hotel C	150	50	80.0	43,800	34,675	126.3
Total/Average	300	100	63.3	69,350	69,350	100.0 %

Based upon each hotel's room count and annual occupancy, the annual number of room nights accommodated in the market can be quantified. The resulting penetration level is the hotel's annual occupied room nights divided by its fair share of occupied room nights. When the hotel accommodates more than its fair share, its penetration exceeds 100%, and vice versa. The above exercise can be applied to not only occupied room nights (occupancy), but also average rate and RevPAR.

In the selection of 46 hotels, the above exercise was conducted in detail during the completion of the appraisal of each property by HVS. During the appraisal process, the market area of each hotel was inspected and a competitive set for each hotel was chosen based on an evaluation of the occupancy, rate structure, market orientation, chain affiliation, location, facilities, amenities, reputation, and quality of each area competitor, as well as the comments of management representatives.

The following chart illustrates the RevPAR penetration of each hotel in the selection, from 2004 through 2011.

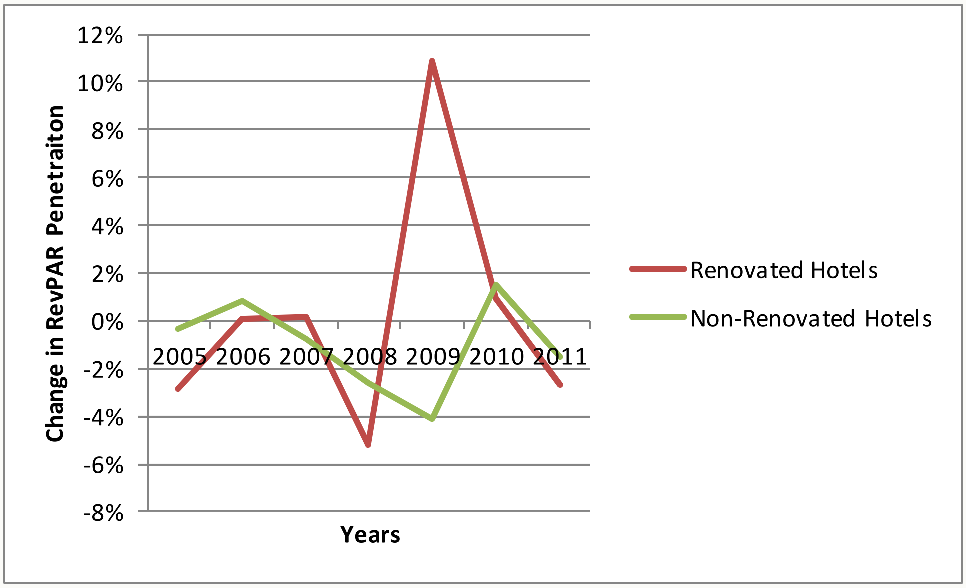
FIGURE 5 CHANGE IN PENETRATION – ALL HOTELS



Upon an initial glance, the data above do not necessarily reveal any noticeable trends. Overall, RevPAR penetration for the group of hotels fluctuated slightly during the historical period shown. Penetration levels remained relatively stable from 2004 through 2007, decreased in 2008, and increased slightly in 2009 and 2010, before declining again in 2011.

However, let us now highlight the years a group of 18 hotels underwent renovation, and then re-graph the change in penetration levels, but this time separated by the group of hotels that underwent renovation and those that did not undergo renovations.

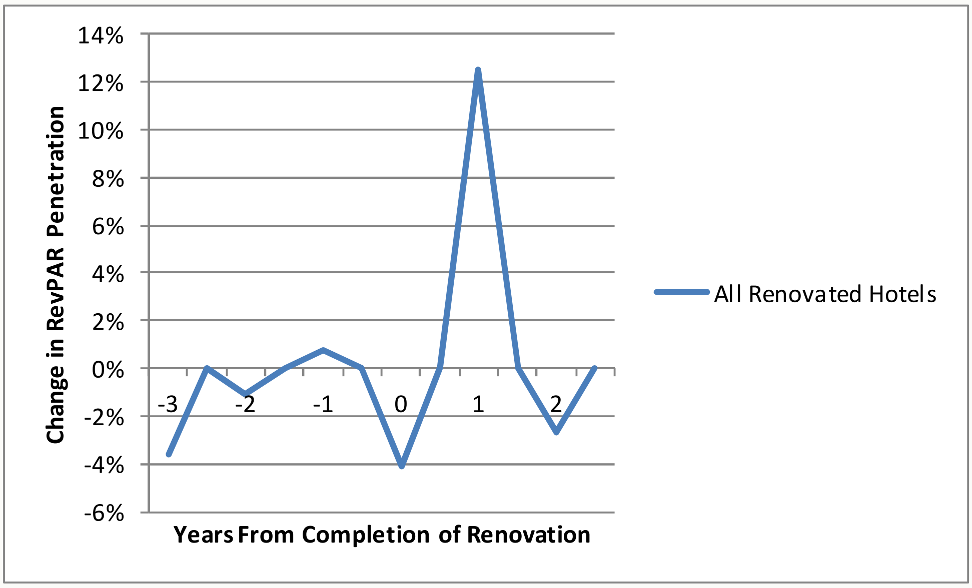
FIGURE 6 CHANGE IN PENETRATION – RENOVATED VS. NON-RENOVATED HOTELS



The graph above illustrates superior performance in market penetration by hotels that completed a renovation when compared with those that did not undergo a renovation. A significant increase of 11% in RevPAR penetration was noted in 2009, which was the first year following the renovation of 15 of the 18 renovated hotels.

Given that not all 18 hotels were renovated at exactly the same time, a second calculation was completed averaging the change in RevPAR penetration for all 18 renovated hotels aligned with the years that the renovations were completed. The results of this calculation revealed a more poignant 12.5% increase in RevPAR penetration in the first year following completion of renovations. The following graph shows the change in RevPAR penetration of all renovated hotels in relation to the years before and after the renovation.

FIGURE 7 PERCENT CHANGE IN REVPAR PENETRATION – (ALL RENOVATED HOTELS)



As Figure 7 illustrates, nearly all hotels that underwent a major renovation noticed an increase in RevPAR penetration in the year that followed the renovation. However, the rates of growth varied dramatically. A scatter plot chart has been completed in order to ascertain any relationships between the amount of investment and a property's RevPAR penetration improvement. This chart is presented below.

FIGURE 8 RENOVATION COST AND CHANGE IN FIRST-YEAR REVPAR PENETRATION

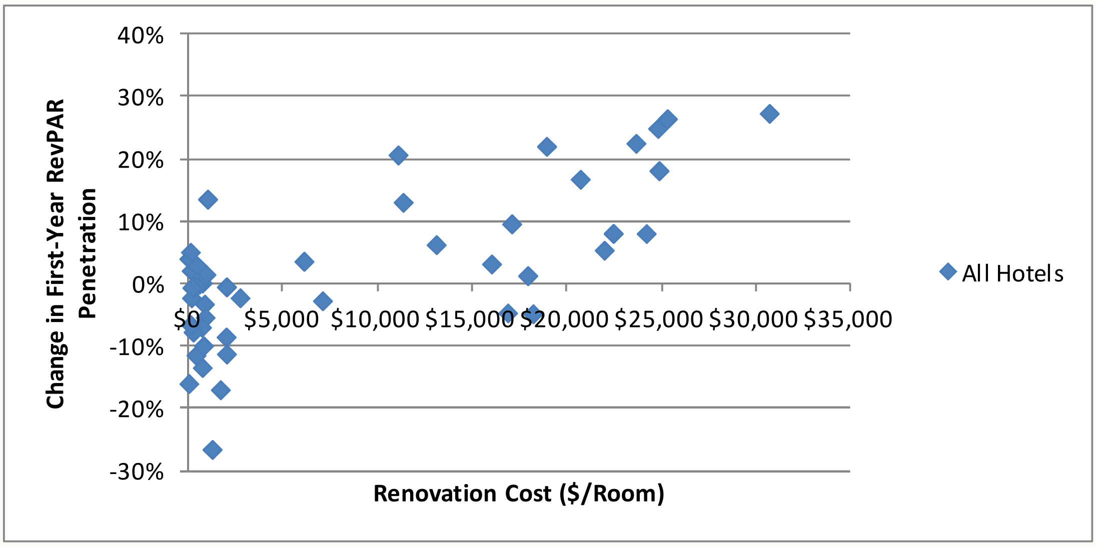


Figure 8 illustrates how most of hotels that underwent a major renovation were able to realize RevPAR increases in the first year after the renovation; however, the data do show a few outliers, hotels that were able to increase their penetration without any capital investment, as well as two assets that noted decreases in their penetration despite significant investment. It is impossible to generalize and attribute market performance to one factor, in this case, renovations. Hotels are complex assets, and performance can be affected by market conditions, management expertise, competition, and supply and demand trends. However, what has been clear in this analysis thus far is that, as an aggregate, both the renovated and non-renovated hotels began at a similar point of RevPAR penetration, and over time, penetration levels changed, with dramatic increases noted by the hotels that did undergo a renovation.

Although RevPAR is an excellent indication of performance, it is also important to understand whether these significant first-year RevPAR increases were achieved mostly through occupancy or average rate. The following two charts break down the RevPAR performance of the 18 renovated hotels by occupancy penetration and average rate penetration.

FIGURE 9 PERCENT CHANGE IN OCCUPANCY PENETRATION

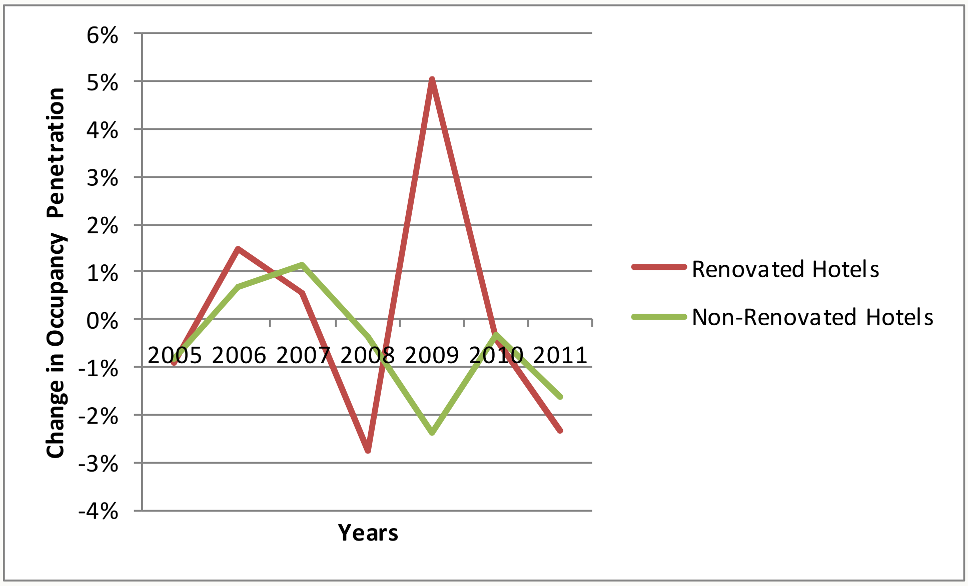
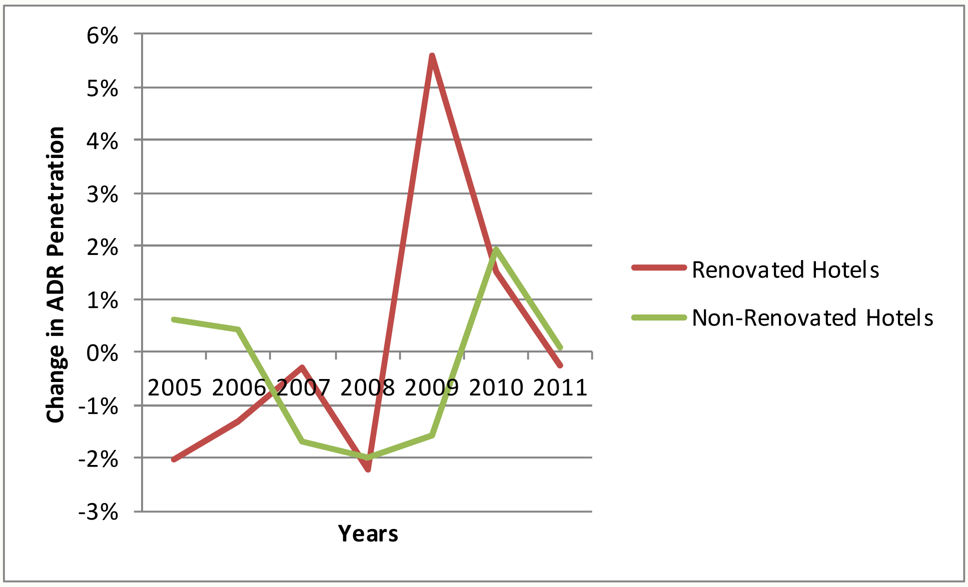


FIGURE 10 PERCENT CHANGE IN AVERAGE RATE PENETRATION



Both charts illustrate that the improvements realized by the renovated hotels were achieved in a relatively equal manner from both occupancy and rate perspectives, peaking in 2009 at 5.0% and 5.6%, respectively.

As previously illustrated in Figure 6, the hotels that did not undergo a renovation during the same period realized either muted growth or declines in RevPAR penetration. However, even though the renovated hotels noted a significant increase in their RevPAR penetration in the first year following the completion of renovations, they too began to realize a downward shift in the third year. This is an important factor often overlooked by appraisers and industry participants, as it is equally important to take a lack of recent renovations into account when forecasting occupancy and rate. The trends in overall RevPAR penetration by both the renovated and the non-renovated hotels are illustrated in the following graph.

FIGURE 11 OVERALL REVPAR PENETRATION

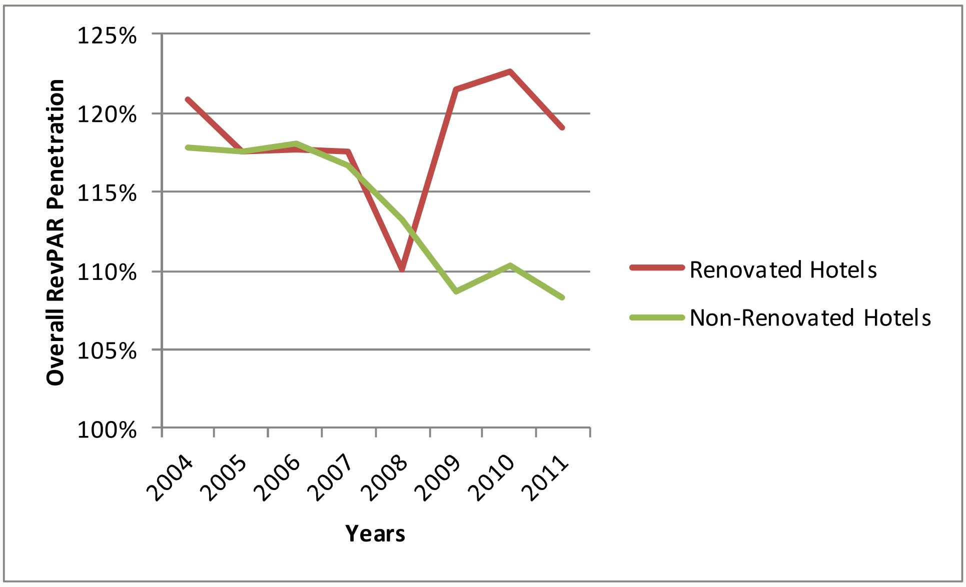


Figure 11 illustrates the similar starting points for both subsets in 2004. Over time, the overall RevPAR penetration rate of the non-renovated hotels decreases. The overall RevPAR penetration rate of the renovated hotels also declines, but then drastically trends upward after the completion of renovations, returning to and even surpassing historical levels in 2009 and 2010, before beginning to trend downward in 2011. The conclusion of this penetration analysis is perhaps best described as not a percentage of increase or decrease that should be expected upon the completion of a major renovation, but by a certainty that peak performance can be restored or maintained with improvements, while properties that are not renovated will eventually fall behind and continue to lose market share in the long term.

EFFECT OF RENOVATIONS ON NET PRESENT VALUE

The previous section analyzed the effect of a major renovation on a hotel's RevPAR penetration level. This section will evaluate how the completion of renovations affects the hotel's net operating income (NOI). In order to complete this analysis, the historical NOI levels of all hotels in our selection have been compiled, with data being available from 2008 through 2011.

NOI is defined as the actual or anticipated net income that remains after all operating expenses are deducted from effective gross income, but before mortgage debt service and book depreciation are deducted; may be calculated before or after deducting replacement reserves.[2]

The NOIs of all renovated hotels were compiled and a discounted-cash-flow projection was produced beginning in 2008, which was the year when the first 15 hotels (of the 18 hotels) were in the process of completing a major renovation. Similarly, a second discounted-cash-flow analysis was produced for the 27 remaining hotels that did not complete a renovation during this period.

[2] Appraisal Institute. The Appraisal of Real Estate – Twelfth Edition. Chicago: Appraisal Institute, 2001.

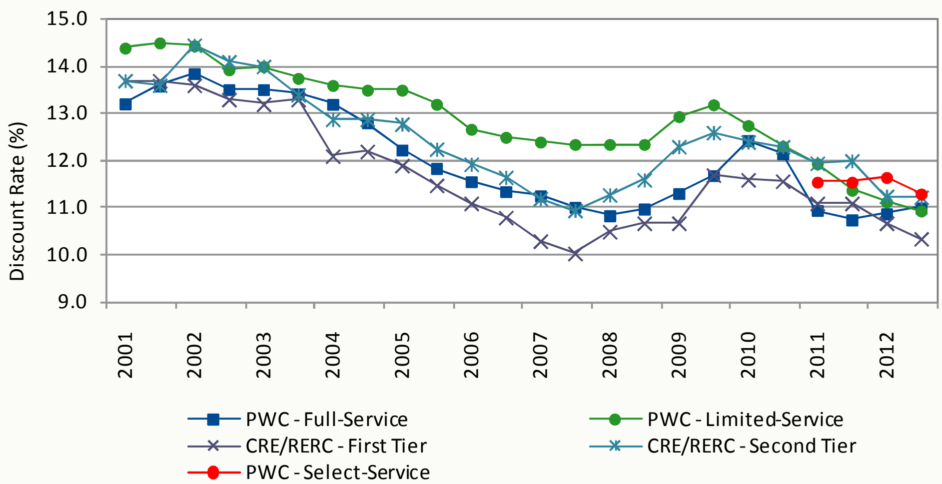
DISCOUNTED CASH FLOW ANALYSIS

As stated in the *Appraisal of Real Estate – Twelfth Edition*, the benefits of owning specific rights in income-producing real estate include the right to receive all cash flows accruing to the real property over the holding period or study period (i.e., the term of ownership) plus any proceeds from disposition of the property at the termination of the investment.

The process of converting an income stream into a net present value via the discounted-cash-flow method is described as follows.

1. An appropriate discount rate is selected to apply to the net operating income. This rate reflects the "free and clear" internal rate of return to an all-cash purchaser or a blended rate of debt and equity return requirements. A discount rate is chosen by reviewing sales transactions, investor surveys, and by interviewing market participants. The following chart summarizes the averages presented for discount rates in various investor surveys during the past decade.

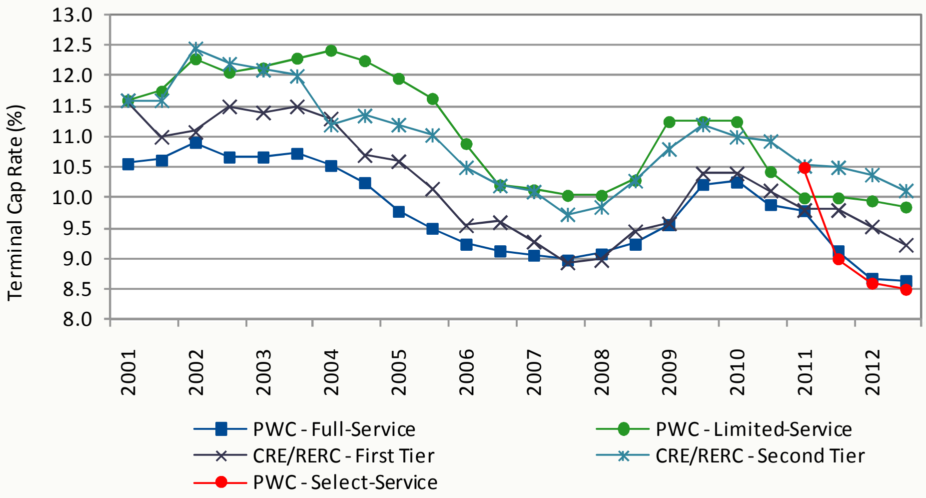
FIGURE 12 HISTORICAL TRENDS OF DISCOUNT RATES FOR HOTELS



We note that these results represent overall averages taken from a wide array of individual data points; accordingly, a range of reasonableness exists above and below the most recent figures. Based on review of these surveys, and considering that our discount-cash-flow analysis begins in 2008, a selected discount rate of 12.00% has been included in the following analyses.

1. A reversionary value reflecting the sales price of the income stream at the end of the five-year holding period is calculated by capitalizing the sixth-year net income by a terminal capitalization rate and deducting typical brokerage and legal fees. The following chart summarizes the averages presented for terminal capitalization rates in various investor surveys during the past decade.

FIGURE 13 HISTORICAL TRENDS OF TERMINAL CAPITALIZATION RATES FOR HOTELS



The final position for the terminal capitalization rate is intended to reflect the market for hotel investments at the time of our valuation. In tandem with overall lower return expectations at the time, terminal capitalization rates for hotel assets reached a low point from 2006 through 2008, prior to the economic recession. During this time, terminal capitalization rates for full-service or first-tier assets were reported near 9.0%, while those of limited-service or second-tier assets were closer to the 10.0% mark. Therefore, for purposes of this analysis, we have applied a terminal capitalization rate of 9.5%.

1. Each year's forecasted net income before debt service and depreciation and the reversionary sales proceeds at the end of the five-year holding period are converted to a present value by multiplying the cash flow by the chosen discount rate for that year in the forecast. The sum of the discounted cash flows equates to the net present value.

Utilizing the parameters set forth, the discounted-cash-flow procedure is summarized as follows. Note that a capital deduction is not applied, as the purpose of the analysis is to understand the value premium, or lack thereof, obtained by the two groups of hotels (renovated and non-renovated).

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FIGURE 14 DISCOUNTED CASH FLOW – RENOVATED HOTELS

Stabilized Year	4
Discount Rate	12.00 %
Terminal Cap	9.5 %
Transaction Costs	3.0

Year	Net Income	Discount Factor @ 12.00%	Discounted Cash Flow
2008	$21,969,000	0.89286	$19,615,179
2009	14,821,000	0.79719	11,815,210
2010	18,495,000	0.71178	13,164,376
2011	20,409,000	0.63552	12,970,288
2012	242,098,647 *	0.56743	137,373,274
		Estimated Value	$194,938,327
		(SAY)	$194,900,000
		Number of Rooms	2,313
		Estimated Net Present Value Per Room	$84,263

Reversion Analysis

6th Year's Net Income	$21,651,908
Capitalization Rate	9.5%
Total Sales Proceeds	$227,914,822
Less: Transaction Costs @ 3.0%	6,837,445
Net Sales Proceeds (Say)	221,077,377

*5th year net income plus sales proceeds

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FIGURE 15 DISCOUNTED CASH FLOW – NON-RENOVATED HOTELS

Stabilized Year	4
Discount Rate	12.00 %
Terminal Cap	9.5 %
Transaction Costs	3.0

Year	Net Income		Discount Factor @ 12.00%	Discounted Cash Flow
2008	$31,489,000		0.89286	$28,115,179
2009	15,672,000		0.79719	12,493,622
2010	17,379,000		0.71178	12,370,029
2011	19,363,000		0.63552	12,305,537
2012	229,690,632	*	0.56743	130,332,633
			Estimated Value	$195,617,000
			(SAY)	$195,600,000
			Number of Rooms	3,495
			Estimated Net Present Value Per Room	$55,966

Reversion Analysis

6th Year's Net Income	$20,542,207
Capitalization Rate	9.5%
Total Sales Proceeds	$216,233,755
Less: Transaction Costs @ 3.0%	6,487,013
Net Sales Proceeds (Say)	209,746,742

*5th year net income plus sales proceeds

The discounted-cash-flow analyses illustrate a superior net present value per room for the hotels that underwent a renovation compared to those that did not.

Furthermore, as shown in the following table, both groups of hotels (renovated and non-renovated hotels) achieved an identical RevPAR of $84 (rounded) in 2008; however, the net operating income of those that did not undergo a renovation was approximately $807 less per available room, or 8.49% lower than the renovated set. As this initial discrepancy would ultimately result in a lower net present value for the group of hotels that did not undergo a renovation, an adjustment to the final value has been calculated and presented below. The adjustment assumes that this relationship would carry into perpetuity, ultimately resulting in a value that is 8.49% lower than that of the renovated set.

FIGURE 16 DISCOUNTED CASH FLOW – ADJUSTMENT

	Number of Rooms	RevPAR	NOI	NOI Per Room
Renovated Hotels	2,313	$84	$21,969,000	$9,498
Unrenovated Hotels	3,495	$84	$31,489,000	$9,010

Upward Adjustment to Net Present value of Non-Renovated Hotels	5.14 %
Non-Renovated Hotel Value Per Room	$55,966
Non-Renovated Hotel Adjusted Value Per Room	$58,843
Renovated Hotel Value Per Room	$84,263
Renovation Value Premium	$25,420

The above chart illustrates that the hotels that underwent a major renovation realized a value premium of $25,000 (rounded) compared to those that did not undergo a renovation. As previously noted, the average cost of the renovations for the 18 renovated hotels was approximately $19,900, with also a median of $19,900. The range of costs fell between $11,000 and $31,000 (rounded).

It is important to note that of the 18 renovated hotels, only one hotel incurred a renovation cost of over $25,000 per room, which implies that, on average, nearly all properties recovered or exceeded the cost of the renovation in their value over a five-year holding period.

For hotel appraisers, these findings are significant, illustrating that hotels that undergo a major renovation realize a value premium at the very minimum equivalent to the cost of the renovation. Furthermore, this information helps to serve as a system of check and balances when forecasting future increases in a hotel's market penetration levels, as penetration increases that result in a net present value that is significantly above or below the cost of the renovation may not be supported.

CONCLUSION

The first part of this article illustrated the market performance of 46 hotels and their trends of occupancy, rate, and RevPAR penetration levels over the course of eight years. As noted, 18 hotels in the group were renovated from the period of 2008 through 2009, while the remaining hotels did not undergo renovations during that time.

The data illustrated that, despite fluctuations in the occupancy, rate, and RevPAR of these properties, which moved in tandem with national trends, the overall RevPAR penetration of those hotels that did undergo a renovation increased considerably, while that of the hotels that did not undergo renovations continued to decline. Furthermore, the data illustrated that the increases in RevPAR were equally acquired through occupancy and rate. Most important to the analysis is the fact that the overall penetration levels of hotels that were renovated recovered to historical levels in the first and second years following a renovation, before beginning to trend downward again.

The second part of this article took the net operating incomes of both groups of hotels and calculated their net present values in order to ascertain if the renovated hotels performed differently than the hotels that were not renovated. The resulting calculations clearly showed that the renovated hotels attained a higher net present value than those that were not renovated, despite the adjustment for initial differences in net operating income. As such, the implications of these findings to hotel appraisers or industry participants are as follow:

1. When appraising hotels that are expected to undergo a renovation, one must adjust the property's penetration levels in order to illustrate the upcoming benefits of the renovation, as the findings illustrate that renovated hotels *are likely to recover their RevPAR penetration to historical peaks.*

2. Similarly, when appraising hotels that are not expected to undergo major renovations, one must build-in a slow decline in the property's penetration levels to account for the loss of competitive advantage.

3. As a check against these projections, an appraiser can utilize the expected cost of the renovation as support for increasing penetration levels, as the data pertaining to the 18 renovated hotels illustrated that they typically recovered the cost of the capital expenditures over a five-year holding period. As an example, if a property is anticipated to undergo a $20,000-per-room improvement that is considered reasonable and appropriate for the property and market, and the appraiser's net present value only shows a benefit of $5,000, he or she could be underestimating the future benefits of the renovation.

Hotels are complex assets, and the dynamics of a local market can greatly influence the performance of a property. Our research indicated that not all assets behaved entirely similarly, likely due to the dynamics of the local lodging market for each respective hotel. Nevertheless, the data presented in this analysis overwhelmingly illustrated the effects of a major renovation (or lack thereof) on a hotel in terms of RevPAR penetration, further translating these benefits to an increase in the net present value.

About HVS

HVS is the world's leading consulting and services organization focused on the hotel, mixed-use, shared ownership, gaming, and leisure industries. Established in 1980, the company performs 4500+ assignments each year for hotel and real estate owners, operators, and developers worldwide. HVS principals are regarded as the leading experts in their respective regions of the globe. Through a network of more than 30 offices and 450 professionals, HVS provides an unparalleled range of complementary services for the hospitality industry. www.hvs.com

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HVS CONSULTING & VALUATION in Houston, established in 2012 by Luigi Major, performs numerous and varied consulting and valuation assignments. Our feasibility studies and appraisals have won wide acceptance among a broad base of developers, investors and the lending community.

About the Author

A well-rounded approach to a hotel appraisal or feasibility study requires objectivity—reveal an existing or proposed hotel's strengths and opportunities, and bring to light any potential pitfalls. Luigi Major, MAI, Managing Director and Senior Partner of HVS Houston, has worked on appraisal and consulting assignments for more than 300 hotels and resorts throughout the U.S., Latin America, and the Caribbean. His reports have helped build hotels, secure loans for hotel renovations and transactions, and guide plans for a wide variety of hotel ventures. That his conclusions have held up under scrutiny and his recommendations so often come to fruition speaks to Luigi's standards for objectivity, organization, and analysis. His passion for the business of hotels speaks for itself, and you can rest assured that this complement of qualities will deliver the most comprehensive, insightful, and well-supported conclusions about your hotel.

Luigi graduated from the University of Houston's Conrad N. Hilton College of Hotel and Restaurant Management. He joined the HVS Dallas office in 2007 and also worked with HVS Mexico to conduct hotel assignments throughout the U.S., Latin America, and the Caribbean including work on several large-scale, international hotel portfolios and mixed-use developments. Having a passion for market research and analysis, Luigi has authored seven articles on performance trends and dynamics of hotel markets in Texas and Latin America. He is a Designated Member (MAI) of the Appraisal Institute. lmajor@hvs.com

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