## CHR Reports

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## Why Discounting Doesn't Work:

The Dynamics of Rising<br>Occupancy and Falling Revenue among Competitors

by Cathy A. Enz, Ph.D. Linda Canina, Ph.D. and Mark Lomanno

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This CHR Report is made possible through an
 alliance between The Center for Hospitality Research and Smith Travel Research. Through this alliance with STR, the data are available for the use of The Center for Hospitality Research under non-disclosure and confidentiality agreements that carefully guide the scope and nature of data reporting.

## About the authors

Cathy A. Enz, Ph.D., is Louis J. Schaeneman, Jr., Professor of Innovation and Dynamic Management at the Cornell University School of Hotel Administration (cae4@cornell.edu). Her research addresses innovation, best practices, and change management; and strategic human resources management, including the empowerment of service workers and the development of social partnerships for economic development. Her more than 50 published articles have appeared in Administrative Science Quarterly, Academy of Management
 Review, Hospitality and Tourism Research Journal, Cornell Hotel and Restaurant Administration Quarterly, and Human Relations.


Linda Canina, Ph.D., is an associate professor of finance at the School of Hotel Administration. With a primary research focus on asset pricing and valuation, she has published in Review of Financial Studies, Journal of Finance, Financial Management, Journal of Hospitality and Tourism Research, and Cornell Hotel and Restaurant Administration Quarterly.

Mark Lomanno is president of Smith Travel Research. A frequent guest speaker at industry conferences and seminars, he oversees the day-to-day operations of STR.


# Why Discounting Doesn't Work: 

# The Dynamics of Rising Occupancy and Falling Revenue among Competitors 

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The long-running debate over whether hotels should discount room rates to boost financial performance becomes particularly contentious during tough economic times. The results reported in this study show that discounting relative to the competitive set does, in fact, fill a hotel, but the study also clearly shows that hotels in direct competition make more money when they maintain their price structure and do not discount to fill rooms. Data drawn from over 6,000 hotels between 200 and 2003 show that hotels with lower prices relative to their competitive set captured market share from the competition, but did not gain higher RevPAR. Conversely, those with higher prices relative to their competitive set had lower occupancy and higher RevPAR. These results suggest a strategy of holding rates constant when competitors are discounting, or even raising prices to a small degree. By raising prices above the competition a hotel will lose occupancy but make up for that loss with higher RevPAR. By offering a lower relative price, on the other hand, a hotel will gain occupancy but its RevPAR performance will be lower than that of its competitive set.

In particular, the data analyzed over the last three years, a difficult period for the industry, show that when a given hotel discounted its room rates to a greater degree than its competitive set, the result was decreased RevPAR compared to its competition (despite increased occupancy). The dynamics between price and occupancy remain quite stable from segment to segment, but the degree to which higher relative prices produce dramatic or gradual relative drops in occupancy does vary by segment. In addition, for 2003 small relative price increases did not enhance relative RevPAR for some segments.

# Why Discounting Doesn't Work: 

## The Dynamics of Rising Occupancy and Falling Revenue among Competitors

By Cathy A. Enz, Linda Canina, and Mark Lomanno

Hotel operators and analysts have debated the wisdom and value of discount ing room rates for many years. ${ }^{\text { }}$ The debate becomes particularly poignant during tough economic times, when many contend that discounting is essential for filling the hotel. In the weak lodging market after 9/ir many U.S. hotel operators dropped their prices in the hopes of stimulating consumer demand, capturing additional market share from their competitors, and augmenting revenue. Others have resisted discounting and faced what some have called the "dilemma of the empty room." ${ }^{2}$

Conventional wisdom and microeconomic theory suggest that when prices fall demand for a given product will rise. This fundamental principle is based on the premise of the downward sloping demand curve. As prices fall, this curve shows that the quantity demanded will rise (holding other factors constant). There is another factor, however, known as price elasticity, which reveals how much the demand for hotels changes in response to a change in price. Price elasticity works as follows: If a certain percentage price discount yields more than a certain percentage increase in sales, demand is called elastic and total revenue is greater than before. Revenue changes depend on the price elasticity of demand. If lodging demand is price elastic then as prices fall revenue will increase. If lodging demand is price inelastic, however, then a particular percentage price cut will bring a less than that percentage increase in demand, and revenue is less than before.

[^0]With those relationships in mind, this report's purpose is to document the empirical relationship between hotels' pricing strategies and their occupancy and revenue per available room (RevPAR) patterns. This study's focus is on individual hotels and their direct competitors in local markets for the years 2001 through 2003. RevPAR is analyzed in addition to occupancy because the goal of managers should be to increase revenues and not just to fill rooms.

The following are the questions we sought to address.
(x) Does a hotel's price discounting relative to its competitors lead to increases in occupancy and, ultimately, increases in RevPAR?
(2) What happens when a hotel sets its prices higher than that of its competitors?
(3) What is the best way to make money, considering your competition? That is, should a hotel drop its prices relative to its competitive set to fill rooms, keep prices constant, or raise its prices? and
(4) Do the dynamics between changes in relative price and relative occupancy differ by price segments (e.g., upscale, economy) or vary by year?
To explore these questions the authors, in cooperation with The Center for Hospitality Research at Cornell University and Smith Travel Research (STR), engaged in a research project that drew data from the STR database, which is effectively a census of brand-name hotels in the United States. This comprehensive sample is widely considered to be fully representative of all branded hotels in the United States. (The STR database also includes many independent properties.)

To ensure that our study captures the competitive pressures that accompany any pricing activities we compare a
hotel's pricing strategies to that of its competitive set of hotels. The competitive set is a key element of this study, for the following reason. The debate over what affects industrywide demand (occupancy) continues, and individual hotels' occupancy is influenced by the actions of their direct competitors. If competing hotels in a local market drop their prices, owners and operators often feel pressure to drop their own prices, to maintain parity with their competitive set and avoid losing demand share. It is the local pricing dynamics that this study explores by documenting the empirical relationship on occupancy and RevPAR performance of a hotel's deviations in pricing from its local competitors. We believe that by analyzing each hotel's performance against that of its individually selected competitive set of hotels (generally between six and ten geographically proximate properties), we can more closely identify the effects of pricing actions on performance under equivalent market conditions.

## The Study

Using annual property-level data for more than io,ooo hotels each year for 2001, 2002, and 2003, we document the relationship between the relative pricing strategies of hotels to their occupancy and RevPAR performance. More specifically, we explore what happens to the percentage difference in annual RevPAR for a hotel relative to its competitive set and to the percentage difference in annual occupancy when a hotel increases or decreases its annual ADR compared to the annual ADR of its competitive set. ${ }^{3}$ The data consist of rooms revenue, rooms sold, and rooms

[^1]
## Ехнівіт 1

## RevPAR and Occupancy Percentage Differences, 2001-2003



Price Differences
available for the focal hotel and for each hotel's competitive set. For a discussion of the data sample and the methodology see the accompanying sidebar (beginning on page iI). ${ }^{4}$

## Percentage differences in

ADR. It is important to note that this study is about the relationship between relative rate differences and relative revenue differences. (We cannot conclude anything about causality from this study.) Therefore, the percentage difference in ADR (relative to the hotel's competitive set) was used as the basis for making comparisons among the pricing strategies of hotels. The pricing strategy of a given hotel in a

[^2]given year was categorized into one of 17 groups based on the percentage difference in ADR. These pricing-strategy groups ranged from a category of 30 to 40 percent lower than the competitive set to a group that priced 60 to 70 percent higher. For example, if the focal hotel had an annual ADR of \$50.00, and the annual ADR of the competitive set was $\$ 60.00$, the percentage difference would be -16.7 percent ([(\$50.00$\$ 60.00) / \$ 60.00]$ x ioo). Consequently, the focal hotel in this example would be placed in the 15 - to 20-percent-lower pricing-strategy group.

After grouping hotels according to their pricing strategies (that is, the percentage difference above or below the ADRs of their competitive set), we
calculated the percentage difference between each focal hotel and its competitive set for both annual occupancy and RevPAR. The data summarized in the following results are the mean percentage differences in RevPAR and occupancy compared to a hotel's competitive set, at various levels of percentage price differences.

## Pricing Strategies and Performance

The initial analysis examined all hotels for each of the three years that we studied, that is, 2001, 2002, and 2003. Exhibit i shows the average percentage difference in occupancy and RevPAR performance across hotels that either raised or lowered their ADRs compared to their competition. Overall, for hotels that dropped their price relative to their competitive set, average percentage differences in occupancies rose, but average percentage differences in RevPARs fell compared to their competition. This pattern held true for hotels in all three years.

As shown in the data table of Exhibit I, the maximum occupancy advantage over the competitive set was obtained by those hotels that had the lowest comparative ADRs. In 2003, for example, hotels that had ADRs 30 to 40 percent lower than those of their competitive set also had 33-percent higher occupancies. Clearly, the strategy of putting heads in beds was accomplished by dropping relative prices. Increased occupancy did not translate into increased revenue for these lowerprice hotels, however, as this group reported the lowest comparative RevPARs, as well. In 2003, for instance, the hotels with prices 30 to 40 percent below the competition reported annual RevPARs that were 9.5 percent below those of competitors. In sum, while the goal of increased occupancy was
achieved by steep price cutting, the consequence for these hotels was substantially lower RevPARs than those of their competitive set. The 2-percent solution. Hotels that essentially held their prices equivalent to those of their competitive set (that is, dropped or raised their relative prices by less than 2 percent) experienced both occupancy and RevPAR gains relative to their competitors. On the other hand, when hotels dropped their relative prices by more than 2 percent below their competition, they were rewarded with higher comparative occupancies, but punished with lower relative revenue. At the same time, hotels that kept their prices higher than those of their competitive set enjoyed relatively higher revenue. According to the data, the maximum RevPARperformance benefit in 2003 was obtained by hotels that charged prices 50 to 60 percent above those of their competitive set. Occupancy tumbled, to be sure. Hotels with these extremely high (relative) prices yielded a 29.64percent lower occupancy, but they recorded the largest comparative RevPAR-ri. 87 percent higher than that of their competitors. This effect held true for all three years. The hotels that did not undercut their competitors on price, but were instead higher priced relative to their competitive set ended each of the three years that we studied with higher comparative revenues per room. In all three years, those hotels that offered average daily rates below their competitive set were relatively lower RevPAR performers, even though they recorded higher occupancies.

It is interesting to note that in each year there were slightly more hotels that priced below their competitors than priced above their competition. (The split was around 55 percent below and 45 percent above.) This also suggests that

Number and Percentage of Hotels in each Price Category

| Percentage | 2001 |  | 2002 |  | 2003 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Difference from Competitive Set | Number of Observations | Percentage of Observations | Number of Observations | Percentage of Observations | Number of Observations | Percentage of Observations |
| 30-40\% Lower | 18 | 0.29\% | 27 | 0.43\% | 23 | 0.39\% |
| 20-30\% Lower | 199 | 3.20\% | 226 | 3.64\% | 228 | 3.83\% |
| 15-20\% Lower | 324 | 5.21\% | 316 | 5.08\% | 311 | 5.22\% |
| 10-15\% Lower | 579 | 9.30\% | 568 | 9.14\% | 555 | 9.32\% |
| 5 -10\% Lower | 1044 | 16.77\% | 970 | 15.61\% | 895 | 15.03\% |
| 2-5\% Lower | 757 | 12.16\% | 748 | 12.04\% | 719 | 12.07\% |
| 0-2\% Lower | 566 | 9.09\% | 538 | 8.66\% | 548 | 9.20\% |
| 0-2\% Higher | 512 | 8.23\% | 538 | 8.66\% | 498 | 8.36\% |
| 2-5\% Higher | 694 | 11.15\% | 686 | 11.04\% | 708 | 11.89\% |
| 5-10\% Higher | 851 | 13.67\% | 877 | 14.11\% | 800 | 13.43\% |
| 10-15\% Higher | 425 | 6.83\% | 409 | 6.58\% | 385 | 6.46\% |
| 15-20\% Higher | 157 | 2.52\% | 201 | 3.23\% | 161 | 2.70\% |
| 20-30\% Higher | 80 | 1.29\% | 87 | 1.40\% | 102 | 1.71\% |
| 30-40\% Higher | 14 | 0.22\% | 18 | 0.29\% | 19 | 0.32\% |
| 40-50\% Higher | 2 | 0.03\% | 4 | 0.06\% | 3 | 0.05\% |
| 50-60\% Higher | 2 | 0.03\% | 1 | 0.02\% | 1 | 0.02\% |
| 60-70\% Higher | 0 | 0.00\% | 1 | 0.02\% | 0 | 0.00\% |
| Total Sample | 6,224 |  | 6,215 |  | 5,956 |  |

the percentage of total hotels sampled that priced below the competitive set was highest in 2001. A review of Exhibit 2 shows that about 17 percent of hotels stayed close to their competitive set when pricing, or within about 2 percent higher or lower. Around 27 percent of the hotels in the sample priced between 2 and io percent lower than their competitors, with a comparable proportion pricing above the competitive set. In total, as shown in Exhibit 2, around 70 percent of all hotels were pricing within io percent of their competition. That said, almost 20 percent of the hotels in this study priced their roomnights at less than io percent below that of their competitors. The most frequent relative price discount for hotels, as shown in Exhibit 2, is between 5 and 10
percent. Similarly, the most popular relative increases were also within the 5 to io-percent range. In summary, those that priced 5 to io percent lower than did the competition lost revenue, while hotels that priced above their competitive set returned higher RevPARs.

## Price Segment Differences

We now turn to an analysis by price segment. For the sake of clarity, only the 2003 results will be discussed, since the results are similar across the three years. The STR price segments, which are based on the actual, system-wide average room rates of major chains, are as follows: luxury, upper upscale, upscale, midscale with food and beverage, midscale without food and beverage,

## Study Methodology

The data used in this study came from Smith Travel Research (STR), which has a database containing observations for over 98 percent of the population of branded lodging properties in the United States. By arrangement with STR, we obtained monthly property-level data over the period 2000 through 2003. We excluded extended-stay hotels from this study because of their distinctive demand characteristics (notably, high average length of stay). We also excluded resorts because of their seasonality (many close for parts of the year), their all-inclusive nature, and inclusion of meals in room pricing.

We analyzed pricing strategies on a yearly basis rather than monthly to avoid pricing irregularities that may have occurred in a particular month that are not representative of the properties' overall pricing strategy. Thus, we aggregated STR's monthly rooms data to arrive at the annual number of rooms sold, annual number of rooms available, and annual rooms revenue for each property and its competitive set for each year from 2000 through 2003. In the process, we eliminated properties that had less than 12 months of data for each of the years in question. We then computed annual ADR, annual RevPAR, and annual occupancy for each property and its competitive set, as follows: ADR was computed by dividing the annual rooms revenue by the annual rooms sold; RevPAR, by dividing annual rooms revenue by the annual rooms available; and occupancy, by dividing annual rooms sold by annual rooms available and multiplying the result by 100 . All dollar-denominated variables were converted to 2003 dollars using the consumer price index (CPI) obtained from the U.S. Bureau of the Census.

## Key Variables

The key variables of interest in this study are the percentage difference in the annual average daily rate (ADR), the percentage difference in annual revenue per available room (RevPAR), and the percentage difference in annual occupancy. The percentage difference in annual RevPAR was defined as the annual RevPAR of the focal hotel less the annual RevPAR of their competitive set, divided by the annual RevPAR of the competitive set, multiplied by 100. The percentage differences in occupancy and ADR were computed similarly.

## Eliminating Outliers

Since the purpose of this study is to analyze the relationship of various pricing strategies with occupancy and RevPAR performance, it is important that the data sample used contain only legitimate competitors. To that end, we excluded performance outliers from the data sample. There are many reasons why a hotel may not be comparable to its competitive set. For example, some properties are included in a hotel's competitive set because they are in close proximity, even though they are not comparable in performance. If we include these mismatched competitors, our data might reveal differences that are not due to pricing. The study relies on the designated competitive sets provided to Smith Travel Research, which requires a minimum of four properties to generate competitive-set reports. It is possible that there are some locations in which there are fewer than four luxury hotels-say, only one. As a result, it is impossible to create a competitive set that contains only luxury hotels. If by chance the competitive set of the luxury hotel con-

## Continued on next page

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## Study Methodology (continued)

tained only mismatched competitors, say, midscale properties, it is possible for this property to outperform its competitive set regardless of its pricing strategy. It would therefore be inappropriate to include this property in the data sample.

Performance outliers were defined as those properties in which the percentage difference in annual RevPAR for the preceding year ( 2000 for the sample of hotels in 2001) exceeded one standard deviation from zero (using absolute value). For example, a focal hotel was included in the sample in the year 2003 if the percentage difference in its RevPAR relative to its competitive set was within one standard deviation of zero in the year 2002. As a result, we can be sure that it is possible for each of the hotels included in the sample to obtain RevPAR similar to that of its comperitive set. We can then conclude that the results are due to differences in pricing strategies and not by performance outliers.

We eliminated all properties from the data sample in one year that showed substantial differences in RevPAR performance in the previous year. These properties were eliminated to ensure that the results were due in fact to differences in their relative pricing strategies. This was accomplished in the following manner: (1) we calculated the percentage difference in annual RevPAR for each focal hotel by year from 2000 through 2003; (2) we then computed the standard deviation of these values by market segment; and (3) we eliminated all properties in year $t$ in which the percentage difference in RevPAR exceeded an absolute value of one standard deviation from zero for all hotels in its marketsegment category in year $t-1$. For example, a luxury hotel was included in the sample for 2001 if the percentage differ-
ence in its annual RevPAR for 2000 was within one standard deviation of zero for luxury hotels.

About standard deviation. We applied the limit of an absolute value of one standard deviation from zero because of the importance of evaluating hotels that were able to achieve past RevPAR performance similar to that of their competitive set. The standard deviation is a measure of the spread in the percentage differences in RevPARs in the data. Hence, a percentage RevPAR difference of zero means that the focal hotel attained a RevPAR exactly the same as its competitive set. A RevPAR percentage difference within one standard deviation reflects the possibility for differences in RevPAR but not differences that are statistically different from zero. If all RevPARs in the industry were the same, each deviation would be 0 , and thus the standard deviation would be equal to 0 , the minimum value.

Inclusion of hotels within one standard deviation of zero provides a conservative test of relative price strategies because we eliminate those hotels that are most different in their performance from their competitive set. As a result of this procedure, we are sure that it is possible for each of the hotels included in the sample to obtain RevPARs similar to that of their competitive set and thus the results will not be influenced by performance outliers.

A summary of the data sample is presented in the table at right. It shows the number of hotels and the percentage of hotels in which the percentage difference in RevPAR was less than minus 1, between -1 and 1 , and more than 1 standard deviation from zero. Only those hotels in the -1 to 1 standard deviation from zero group are included in the sample. For example, in 2001, of the 10,916 hotels

Continued on next page
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Number and Percentage of Hotels in which the Percentage Difference in RevPAR is Less than -1, Between -1 and 1, and Greater than 1 Standard Deviation from Zero By Year, Standard Deviation Group and Hotel Segment

Panel A: Number of Hotels

|  | Luxury | Upper Upscale Upscale |  | $\begin{aligned} & \text { Midscale } \\ & \text { with w/o } \end{aligned}$ |  | Econ. | Indep. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  | 2001 |  |  |  |  |
| Less than minus 1 SD | 13 | 77 | 93 | 542 | 423 | 825 | 203 | 2,176 |
| Between -1 and 1 SD | 51 | 513 | 561 | 1310 | 2431 | 944 | 414 | 6,224 |
| More than 1 SD | 37 | 318 | 362 | 328 | 1253 | 142 | 76 | 2,516 |
| Total | 101 | 908 | 1,016 | 2,180 | 4,107 | 1,911 | 693 | 10,916 |
|  |  |  |  | 2002 |  |  |  |  |
| Less than minus 1 SD | 13 | 89 | 114 | 595 | 494 | 780 | 209 | 2,294 |
| Between -1 and 1 SD | 59 | 515 | 587 | 1271 | 2499 | 912 | 372 | 6,215 |
| More than 1 SD | 41 | 346 | 431 | 315 | 1457 | 144 | 78 | 2,812 |
| Total | 113 | 950 | 1,132 | 2181 | 4450 | 1836 | 659 | 11,321 |
|  |  |  |  | 2003 |  |  |  |  |
| Less than minus 1 SD | 8 | 98 | 134 | 538 | 528 | 710 | 138 | 2,154 |
| Between -1 and 1 SD | 64 | 505 | 597 | 1,090 | 2,565 | 857 | 278 | 5,956 |
| More than 1 SD | 44 | 371 | 478 | 271 | 1,593 | 134 | 77 | 2,968 |
| Total | 116 | 974 | 1,209 | 1,899 | 4,686 | 1,701 | 493 | 11,078 |

Panel B: Percentage of Observations

|  | Luxury | Upper UpscaleU | Upscale | Midsc <br> with <br> F\&B | cale w/o F\&B | Econ. | Indep. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 2001 |  |  |  |  |
| Less than minus 1 SD Between - 1 and 1 SD More than 1 SD | 12.87\% | 8.48\% | 9.15\% | 24.86\% | 10.30\% | 43.17\% | $29.29 \%$ | 19.93\% |
|  | 50.50\% | 56.50\% | 55.22\% | 60.09\% | 59.19\% | 49.40\% | 59.74\% | 57.02\% |
|  | 36.63\% | 35.02\% | 35.63\% | 15.05\% | 30.51\% | 7.43\% | 10.97\% | 23.05\% |
|  |  |  |  | 2002 |  |  |  |  |
| Less than minus 1 SD Between - 1 and 1 SD More than 1 SD | 11.50\% | 9.37\% | 10.07\% | 27.28\% | 11.10\% | 42.48\% | 31.71\% | 20.26\% |
|  | 52.21\% | 54.21\% | 51.86\% | 58.28\% | 56.16\% | 49.67\% | 56.45\% | 54.90\% |
|  | 36.28\% | 36.42\% | 38.07\% | 14.44\% | 32.74\% | 7.84\% | 11.84\% | 24.84\% |
|  |  |  |  | 2003 |  |  |  |  |
| Less than minus 1 SD <br> Between -1 and 1 SD More than 1 SD | 6.90\% | 10.06\% | 11.08\% | 28.33\% | 11.27\% | 41.74\% | 27.99\% | 19.44\% |
|  | 55.17\% | 51.85\% | 49.38\% | 57.40\% | 54.74\% | 50.38\% | 56.39\% | 53.76\% |
|  | 37.93\% | 38.09\% | 39.54\% | 14.27\% | 33.99\% | 7.88\% | 15.62\% | 26.79\% |

## Study Methodology (concluded)

available for study only 57.02 percent or 6,224 were included in the study. The 4,692 other hotels were excluded from the study because they had either substantially higher or substantially lower RevPARs than their competitive set. In our data 23.05 percent of the properties had prior-year performance greater than one standard deviation and 19.93 percent lower than one standard deviation.

Across the three years, a little more than 50 percent of the total sample of hotels fell within one standard deviation of their competitive set in RevPAR performance, while over 40 percent of the total sample of hotels either generated substantially more or substantially less revenue per available room than their competitors. These hotels were excluded from the study so that we would not be looking at hotels that were serious under- or overperformers in a previous period. Hence, we believe the study captures true competitors.

The table also provides similar data by market segment. It is interesting to note that of all the hotel segments, economy hotels had the largest percentage of hotels that were performing substantially lower than their competitive set. In 2001, 43.17 percent of economy hotels reported RevPARs below one standard deviation from their competitive set for the previous year. The year 2002 revealed 42.48 percent of economy hotels below one standard deviation from their competitors in RevPAR performance. In 2003, a total of 41.74 percent of economy hotels performed below their competitive set in the previous year. One possible reason that economy chains have the highest per-
centage of RevPAR outliers (on the low side) when compared to their competitive set is that this segment by definition contains the lowest-price chain properties. Not having sufficient "traditional competitors" in their market, they may have to compare their results to those of higher priced properties (to reach the STR minimum of four properties to generate competitive set reports).* In addition, many economy properties are in rural markets where the population of hotels is limited. Hence, as a result of the sampleselection criteria used in this study, hotels with problematic competitive sets were not included.

The competition. While overall the percentage of poor performers relative to their competitive set has been declining since 2001, economy, independent, and midscale hotels with food and beverage are segments in which sizable percentages of hotels reported RevPAR performance substantially lower than that of their competitors. After selecting only hotels that were similar (within one standard deviation) to their competitive set on RevPAR performance in the previous year, our sample was reduced to between 5,956 and 6,224 depending on the year studied. The numerous hotels that remained in this study are considered true competitors because their year-earlier performance was close to that of their competitive set. For this sample of hotels we computed annual RevPARs, occupancies, and ADRs for each hotel and for each hotel's competitive set in 2001, 2002, and 2003.

[^3]
## Luxury Hotels RevPAR and Occupancy Percentage Difference from the Competitive Set: 2001-2003



Price Differences
and economy (independent hotels are treated as a separate category).

## Luxury

The effects of relative price differences on occupancy and RevPAR performance for high-end hotels are shown in Exhibit 3. In contrast to all other price segments in the industry, relative occupancies for this segment do not show a consistent pattern with changes in relative price. For example, in 2003 hotels that priced 2 to 5 percent lower than their competitors not only recorded lower RevPARs, but they also
had lower occupancy. However, those that priced within 2 percent above their competition also had lower RevPARs and occupancy. When the price differential was much greater than that of competitors the pattern of occupancy and RevPAR performance is similar to that of the entire sample, as presented in Exhibit I. For the luxury hotels with the highest relative prices, occupancies fall dramatically, but RevPARs are significantly higher. For example, luxury hotels that price 20 to 30 percent above their competitors have a 6.80 -percent better RevPAR performance while they

## Ехнівіт 4

## Upper Upscale Hotels RevPAR and Occupancy Percentage <br> Difference from the Competitive Set: 2001-2003



Price Differences
have 14.29-percent lower occupancy. This segment has the least consistent relationship between pricing, RevPAR performance, and occupancy. Nevertheless, hotels that chose to drop prices 5 percent lower than their competitors in all three years of our study experienced lower RevPARs, and in 2002 certain hotels experienced relative occupancy declines (e.g., those that undercut competitors by io to 15 percent).

## Upper Upscale Hotels

Exhibit 4 shows the relative occupancy and RevPAR patterns for upper upscale
hotels. Unlike the luxury properties, this segment behaves similarly to the sample as a whole. Relative occupancies rise when relative prices fall, but relative RevPARs fall substantially with rates. If discounting is designed to steal market share, it is successful here. The hotels with the lowest relative prices do, indeed, take away market share from their competitors and gain occupancy. But those same hotels lose RevPAR in relation to their competitors. This pattern held true for all three years of the study. Hotels that priced within 2 percent above or below their competi-

## Differences in RevPAR and Occupancy from Competitive Set for Each Pricing Strategy of Upper Upscale Hotels

| Price Difference from Competitors | 2001 |  | 2002 |  | 2003 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean RevPAR Differences | Mean Occupancy Differences | Mean RevPAR Differences | Mean Occupancy Differences | Mean RevPAR Differences | Mean Occupancy Differences |
| 30-40\% Lower | - | - | (\$5.18) | 19.44\% | (\$8.46) | 15.32\% |
| 20-30\% Lower | - | - | (8.84) | 8.85\% | (5.52) | 13.06\% |
| 15-20\% Lower | (\$6.78) | 14.18\% | (5.77) | 5.50\% | (4.17) | 8.18\% |
| 10-15\% Lower | (5.93) | 7.32\% | (3.45) | 5.09\% | (3.11) | 4.57\% |
| 5-10\% Lower | (5.48) | 4.14\% | (2.38) | 2.46\% | (2.10) | 2.85\% |
| 2-5\% Lower | (2.93) | 2.93\% | (0.80) | 1.61\% | (0.36) | 1.69\% |
| 0-2\% Lower | (0.24) | 2.18\% | 0.64 | 1.14\% | 0.60 | 1.64\% |
| 0-2\% Higher | 0.19 | 0.67\% | 0.70 | 0.51\% | 0.44 | -0.18\% |
| 2-5\% Higher | 2.17 | 1.76\% | 2.04 | -0.12\% | 1.94 | 0.00\% |
| 5-10\% Higher | 3.47 | 0.65\% | 3.62 | -0.80\% | 4.28 | 0.23\% |
| 10-15\% Higher | 4.30 | -0.34\% | 3.95 | -3.13\% | 4.66 | -2.20\% |
| 15-20\% Higher | 5.25 | -2.09\% | 5.86 | -3.76\% | 5.63 | -3.68\% |
| 20-30\% Higher | 7.46 | -4.49\% | 1.52 | -10.82\% | 5.33 | -6.09\% |
| 30-40\% Higher | 6.05 | -5.47\% | - | - | - | - |

tive set are quite similar to competitors in their RevPAR and occupancy performance. Those that maintained prices lower in this range have higher occupancies than those that priced higher, but those discounters have lower RevPARs. Thus, while it appears that the modest 2-percent price increases or price reductions relative to the competition are both viable strategies (in terms of RevPAR), hotels in this segment that drop their price more than 2 percent below that of their competition suffer in terms of RevPAR. On the other hand, hotels that price above their competition experience lower occupancies and substantially higher RevPARs than those of competitors. It is possible that once a hotel in this segment drops price, it may be particularly difficult to reverse
this strategy and raise prices dramatically, since the consumer will have developed a new benchmark for the hotel's value proposition.

Exhibit 5 shows the actual RevPAR
differences (in dollars) and occupancy differences for the sample of upper upscale hotels as each hotel's prices rise or fall compared to the competition. For upper upscale hotels, an ADR 2 to 5 percent lower than the competition in 2003 translated into a r.69-percent higher occupancy rate, and a $\$ .36$ higher RevPAR. In contrast, a 5 - to io-percentlower ADR yielded a 2.85 -percent higher occupancy rate, but \$2.1o less in RevPAR. As the table shows, the decision to lower ADR is successful in raising occupancy but lowers revenue for each of the three years.

## Ехнівіт 6

## Upscale Hotels RevPAR and Occupancy Percentage Difference from the Competitive Set: 2001-2003



Price Differences

## Upscale Hotels

Small changes in upscale hotels' prices relative to the competition do not occasion great fluctuations in occupancy. However, hotels that maintain a dramatic difference in their ADR relative to competitors see considerable differences in revenues and occupancy, as shown in Exhibit 6. As is true of other segments, RevPAR performance is better for those hotels with prices higher than the those of the competition. The dramatic increases in occu-
pancy occur when hotels discount rooms in excess of io percent below their competitors' price levels. The gap between rising occupancies and falling RevPARs is most pronounced in these heavily discounted hotels. Clearly, upscale hotels that dramatically discount relative to their competition made substantial occupancy gains, but those occupancy gains did not offset the negative revenue effects of lower ADRs, resulting in comparatively lower RevPARs. To reiterate this point, occupancy rates in upscale hotels appear

# Midscale with Food and Beverage Hotels RevPAR and Occupancy Percentage Difference from the Competitive Set: 2001-2003 



Price Differences
relatively insensitive to price discounts until the ADR reduction is substantial. This may be due to price uniformity in the segment or because upscale hotels sometimes compete for guests with higher price properties, making price less of an issue.

## Midscale Hotels with Food and Beverage

Midmarket hotels that provide food and beverage can make substantial occupancy gains by lowering their prices relative to the competition. Hotels in
this segment saw considerable occupancy boosts (relative to competitors) when they priced over 30 percent lower than their competitors, as illustrated in Exhibit 7. In 2003, for example, the hotels that had ADRs over 30 percent lower than those of their competition enjoyed an occupancy advantage of 46 percent. Once again, however, this strategy of preempting market share yielded comparatively lower revenue per available room. As with most other segments, discounting rates does not result in better RevPAR than that of the

competition. Hotels that priced above their competitors lost occupancy, but outperformed them in RevPAR. For hotels in this segment, the more they raised their price, the more money they made (relative to competitors), although the high-price hotels' occupancies were lower than those of competing hotels.

## Midscale Hotels without Food and Beverage

Exhibit 8 reveals a similar picture for midscale limited-service hotels: reduced occupancies and increased RevPARs result when hotels price above their competition. Unlike the midscale full-
service hotels, however, properties without $\mathrm{F} \& \mathrm{~B}$ begin to experience a RevPAR drop when prices are 30 to 40 percent above the competition. The best pricing position (i.e., revenue enhancing) appears to differ in each year of our study. The highest comparative prices (40 to 50 percent higher than those of competitors) were most effective at raising revenue in 2003. A smaller pricing differential ( 15 to 20 percent above competitors) brought in RevPAR premiums in 2001, while an even smaller differential (io to 15 percent above the competition) was the most effective position in 2002. We found no notice-

## Ехнівіт 9

## Economy Hotels RevPAR and Occupancy Percentage Difference from the Competitive Set: 2001-2003


able pattern when price differentials were small.

## Economy Hotels

One might expect that economy hotels would reap the greatest benefits from price discounting, given that their customers are considered to be the most price sensitive. Not so: even in the economy segment, higher prices produced RevPAR benefits for 200 and 2003 (see Exhibit 9). However, in this segment, we found that modest discounting sometimes boosted revenue along with occupancy. The RevPAR benefits of maintaining high prices were
not evident for this segment in 2002, and those benefits were not as consistently tied to higher ADRs as they were for other hotel segments. As the data in Exhibit 9 show, small RevPAR benefits were obtained by hotels that had prices up to 2 percent lower than those of the competition in 2001 and 2002, and between 2 and 5 percent lower in 2003. Still, as we found frequently with other segments, the highest RevPAR benefits accrued to hotels with rates that were substantially above those of competitors. It is important to note that alone among the industry segments, economy hotels did not gain revenue or occu-

# Differences in RevPAR and Occupancy from Competitive Set for Each Pricing Strategy of Economy Hotels 

|  | 2001 |  |  | 2002 |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{c}\text { Price Difference } \\ \text { from Competitors }\end{array}$ | $\begin{array}{c}\text { Mean } \\ \text { RevPAR } \\ \text { Differences }\end{array}$ | $\begin{array}{c}\text { Mean } \\ \text { Occupancy } \\ \text { Differences }\end{array}$ | $\begin{array}{c}\text { Mean } \\ \text { RevPAR } \\ \text { Differences }\end{array}$ | $\begin{array}{c}\text { Mean } \\ \text { Occupancy } \\ \text { Differences }\end{array}$ | $\begin{array}{c}\text { Mean } \\ \text { RevPAR } \\ \text { Differences }\end{array}$ | \(\left.\begin{array}{c}Mean <br>

Occupancy <br>
Differences\end{array}\right]\)
pancy benefits from raising prices only slightly above the competition. We suspect that this market's legendary price sensitivity is, in fact, at work in this finding. For example, in 2003, hotels that had ADRs between 2 and 5 percent higher than those of their competitors experienced 4.34-percent lower occupancies and .89 -percent lower RevPARs. Comparing the year 2003 with 2002, RevPARs rose substantially for hotels that priced above their local competitors in 2003.

In Exhibit io actual RevPAR amounts and occupancy percentages are reported for the sample of economy hotels. Hotels with an ADR 2 percent or lower than that of the competition in

2003 have a tiny ( 0.43 percent) advantage in occupancy, with an equally small, 8 -cent loss in RevPAR. When the 2003 percentage difference was 5 to io percent lower, the discounting hotel gained 3.38 percent in occupancy, but lost 87 cents in revenue for each room available for sale in the year. With deep price drops hotels lose as much as $\$ 3.46$ per room in revenue, while gaining around i8 percent in occupancy. Once again the data suggest that occupancy benefits from discounting prices are not likely to yield revenue gains. It is important to note that for this segment, many hotels that priced substantially above their competitors in 2002 (for example, 15 to 30 percent above) did experience

## Exhibit 11

Independent Hotels RevPAR and Occupancy Percentage Difference from the Competitive Set: 2001-2003


Price Differences

RevPAR losses. This situation was reversed in 2003, however, and the hotels with aggressive pricing were rewarded with relatively higher RevPAR. In summary, even in the pricesensitive economy segment greater RevPAR losses are reported for hotels that offer lower prices relative to their competition, but modest price premiums can also result in RevPAR losses.

## Independent Hotels

The final segment explored in this study was composed of independent hotels, which were in no way immune to the
pattern of rising occupancies and falling RevPARs when they dropped their price compared to their competitive set (as shown in Exhibit II). Substantial occupancy gains were evident from deep discounting by independent hotel operators. For example, the data in Exhibit in show that in 2003 hotels with ADRs between 30 to 40 percent lower that those of competitors could experience a 43.24-percent higher occupancy than that of their competitors. When a hotel's average rate was $30-$ or $40-$ percent higher, though, occupancies were 20.4 percent lower than those of

## Answers to Four Discounting Questions

## (1) Does price discounting relative to the competition lead to increases in occupancy and, ultimately, increases in RevPAR? <br> Yes and no-only half of this dynamic is true. Offering guests prices that are lower than those of competitors does lead to higher occupancy percentages for the discounting hotel, but these comparatively lower prices do not increase RevPAR performance compared to the competition.

(2) What happens when a hotel prices above its competitors?
Hotels that price higher than their competitors have lower occupancies, as expected, but those hotels generally record higher RevPARs, especially when they price substantially higher than do their competitors.
(3) What is the best way to make money compared to your competition? Should a hotel drop prices to fill rooms or raise prices?
The best way to have higher revenue performance than your competitors is to maintain higher rates. A hotel should not drop its prices below those of its competitors if it wishes to enhance revenue. Although this study focused on RevPAR and did not consider the added costs of increased occupancy, those variable costs are not negligible. Even as the hotel takes in less money, it experiences higher variable costs from wear and tear on the facility, higher utility costs (for water, gas, electricity), consumables such as in-room amenities, and, perhaps, higher labor costs (for housekeeping, for example). Taking those factors into account, we would predict an even bigger negative effect on the GOP from discounting than just the RevPAR decline explored in this study.
(4) Do the dynamics between changes in price and occupancy differ by price segments (e.g., upscale, economy) or vary by year?
Small differences were found in different price segments and across the three years in this study. The pattern of results is generally consistent across segments and time. That said, guests of luxury hotels appear to be insensitive to price discounting while customers of economy hotels are quite sensitive to small price increases.
competitor hotels. In 2003 independent hotels that maintained a $30-$ to $40-$ percent higher average daily rate enjoyed the greatest RevPARs compared to competitors. In contrast, the lowest RevPARs were for hotels that priced 15 to 20 percent lower than did competitors. As was the case for branded hotels, raising prices compared to the competitive set was a revenue-enhancing strategy for independent hotels. We must note an anomaly in 2003, however, when small price increases (up to 5 percent) resulted in both RevPAR and occupancy losses relative to competitors.

For the last three years the pattern of results reported in this study shows that almost universally hotel price discounting leads to increases in occupancy but decreases in RevPAR compared to the situation for competitors. Increased prices push down occupancies, but that decline is more than offset by increases in RevPAR. Although the patterns show some variations at various levels of discounting and price premiums in specific segments the overall dynamics between price and occupancy have been remarkably stable over the period of 2001 through 2003. In 2003, for instance, small price increases did not enhance RevPAR in some segments. Nevertheless, the results imply that the local lodging market demand is relatively inelastic (that is, it allows theft of market share but not increased revenue). Moreover, price elasticity varies along the demand curve and across market segment demand curves.

## Answers to the Discounting Questions

At the start of this paper we posed several questions relating to discounting hotel rates. Based on the data from over 6,00o hotels in our study, we summarize what the data suggest in answer to these questions, as shown in the box at left.

## Next Steps—So What Do I Do?

A wide variety of opinions exists on the propriety of discounting. Many hoteliers contend that discounting room rates is a necessity during tough economic times. The following comment is typical of this view: "The calls for a halt in discounting will fall on deaf ears as long as there are bills to pay. And as long as it's part of a yield-management program, there's nothing wrong with discounting."s The results reported in this study show that hotels in direct competition make more money when they have comparatively higher prices and do not undercut competitors by discounting rates to fill rooms. The data show that those hotels that dropped their relative prices did capture market share from the competition (as intended), but they did not gain higher RevPAR. A good yield-management program is critical, but this study suggests that holding rates when your competitors are discounting or raising your price even to a small degree above your competition may help solidify revenues. (We note again, however, that in the economy segment slightly higher prices did not prove advantageous.) By raising prices relative to your competitive set you will lose occupancy to be sure, but you will make up for the loss in filled beds with higher RevPAR.

This study shows that the industry's long-held belief that discounting will build market share is absolutely correct. However, the belief that market

[^4]share increases will yield higher revenue is not supported here. Cutting prices means diminished revenue. Each manager, owner, and chain executive will need to decide how to deal with the challenges of pricing in a difficult market and weigh the revenue-versus-market-share tradeoff-keeping in mind that hotels in each market may be at the mercy of their dumbest competitor in a race to the bottom if they follow a path of price discounting.

The results of this study confirm the position of hotel operators who resisted the pressure to drop prices below those of their competitors simply to grab market share (or simply because competitors were discounting). Note that we do not argue for or against a particular pricing stance in this report; pricing is a complex matter. However, we do suggest that hotel managers take these findings into account in setting their room rates. What our results show is that discounting for the sake of gaining occupancy has not been a revenue-enhancing strategy for the years 2001, 2002, or 2003. This study also supports the position of those who faced owners' concerns about declining occupancy concerns but maintained rate integrity and parity or higher prices relative to the competition. For those operations who could handle comparatively lower occupancies, the reward was higher RevPAR performance than the competitive set. It is our hope that by examining hotels that outperformed their competitive set, we can offer some sound data to inform those who are puzzling over the discounting debate.

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[^0]:    ${ }^{\text {I For just three examples over the years, see: Richard }}$ Nolin, "Pricing Policies for Hotels," Cornell Hotel and Restaurant Administration Quarterly, Vol. 5, No. 4 (February 1965), pp. 49-50; William Morton, "Marketing Excess Inventory: Let's Hold a Sale!," Cornell Hotel and Restaurant Administration Quarterly, Vol. 17, No. 3 (November 1976), pp. 4-7; and James C. Makens, "Business at Any Price," Cornell Hotel and Restaurant Administration 2uarterly, Vol. 27, No. 2 (August 1987), pp. 13-15.
    ${ }^{2}$ E. Watkins, "Readers React to Rate Dilemma," Lodging Hospitality, June 2003, Vol. 59, Issue 8, p. 4.

[^1]:    ${ }^{3}$ As explained in more detail starting on page m, the percentage difference in annual RevPAR was defined as the annual RevPAR of the focal hotel less the annual RevPAR of their competitive set, divided by the annual RevPAR of the competitive set, multiplied by ıо.

[^2]:    ${ }^{4}$ All dollar denominated variables were converted to 2003 constant dollars using the consumer price index (CPI) obtained from the U.S. Bureau of the Census.

[^3]:    *A similar but opposite result was found for the luxury segment. Luxury chains have the highest percentage of observations above one standard deviation, approximately 36 percent.

[^4]:    ${ }^{5}$ J. Higley, "Discounting Isn't Bad When It's Done Correctly," Hotel \& Motel Management, July 21, 2003, p. 8.

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