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The Effects of Gasoline-price Changes on Room Demand: A Study of Branded Hotels from 1988 through 2000

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The Effects of Gasoline-price Changes on Room Demand: A Study of Branded Hotels from 1988 through 2000

Abstract

[Excerpt] *As hoteliers have long suspected, gasoline-price increases do depress overall lodging demand, but not all segments feel the effects in the same way (and some not at all).*

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hospitality industry, hotel room demand, gasoline price, fluctuations

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Comments

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The Effects of Gasoline-price Changes on Room Demand:

A Study of Branded Hotels from 1988 through 2000

As hoteliers have long suspected, gasoline-price increases do depress overall lodging demand, but not all segments feel the effects in the same way (and some not at all).

BY LINDA CANINA, KATE WALSH, AND CATHY A. ENZ

“With gas prices at a premium this summer, every little bit helps,” proclaimed Wayne Wielgus, senior vice president of marketing for Choice Hotels, as he announced a gasoline-price promotion in 2002.¹ During that summer Choice Hotels gave its guests a \$5 gas card when they booked in advance and stayed for a minimum of two nights at Comfort, Quality, Clarion, Sleep, or MainStay Suites properties. Choice planned to give away \$2 million in free gasoline in response to the concern that consumers would stay at home as gasoline prices rose. This view that gasoline-price increases depress hotel bookings is shared by many. A 2001 study

suggested that 14 percent of all travelers, or 19.2 million people, would travel less or cancel vacations because of rising fuel prices.²

From freeways filled with weekday commuters to summer road trips with the kids, automobile travel is a key feature of the life and habits of U.S. residents. Indeed, by 1990 the United States was responsible for one-third of the world’s oil consumption, and transportation consumed two-thirds of the U.S.’s total petroleum use.³ As a result, gasoline-price changes affect consumers’ purchasing power. Thus, it is no wonder that changes in gasoline prices are headline news, or that gaso-

¹Kristin Amarante, “Choice Markets Message to Many in New Campaign,” *hotelsinteractive.com*, viewed on May 3, 2001.

²Christine Cube, “Tourism Groups Change Itinerary on S. American Tour,” *Tourism & Hospitality*, June 1, 2001.

³A. Gately, “The U.S. Demand for Highway Travel and Motor Fuel,” *The Energy Journal*, Vol. 11 (1990), pp. 59–73.

line-price fluctuations play a central role in U.S. economic planning.

Automobile-based travel is not the only casualty of rising fuel prices. The question we address in this article is, to what extent is demand for lodging products related to gasoline-price changes? Because Americans consume such a large quantity of energy, it is logical to assume that the demand for many goods and services, including lodging, is related to gasoline-price shifts. Nevertheless, this relationship between gasoline-price changes and lodging demand, while reasonable, has not been empirically investigated, and the magnitude of the effect has not been established. In addition to examining this effect, we are particularly interested in determining the strength of the connection between gasoline consumption and lodging demand among various lodging segments and different locations. We expect that while gasoline-price fluctuations are significantly related to demand for hotel products, some products and locations will feel the effects more deeply. To set a context for this study, we first explore existing research on gasoline prices, consumption, and lodging demand.

Gasoline Use and the Consumer

According to the existing literature, gasoline consumption varies in relation to each household's driving requirements.⁴ For example, households where both spouses or partners work generally consume more gasoline than households where only one person works outside the home.⁵ In addition, those living in rural areas commonly drive more miles than do those living in suburban and urban areas. Studies have also revealed that gasoline demand is lower in the northeast and Pacific regions than in other parts of the country, because those two regions have relatively higher availability and sophistication in alterna-

tive forms of urban transportation. Finally, on average, young single adults (under 35 years old) drive more than do other categories of individuals, such as those over 60 or married adults.⁶ This information suggests that hotel products which address the needs of different consumers could be affected differently by gasoline-price fluctuations.

Numerous studies examining the price elasticity of gasoline demand have indicated that the demand for gasoline by low-income households (\$12,000 or less per annum) is more price elastic than is that of high-income households (\$70,000 or more).⁷ That is, low-income households substantially reduce their gasoline consumption as gasoline prices increase, while consumers with high incomes do not make dramatic changes in gasoline consumption in response to price changes.⁸ Given that price-sensitive consumers reduce gasoline consumption when the price increases, one would, by extension, expect those consumers to curtail their travel plans. Indirectly, this logic suggests that when gasoline prices increase, demand for certain low-price lodging products should fall.

Regarding lodging consumption, studies have examined the factors that may influence lodging demand, such as room rates, gross domestic product (GDP),⁹ room taxes,¹⁰ and substitutes and complements.¹¹ For example, one study found that for a 1-percent increase in room taxes, aver-

⁴ L.A. Greening, T.J. Hann, J.P. Formby, and D.C. Cheng, "Use of Region, Life-cycle, and Role Variables in the Short-run Estimation of the Demand for Gasoline and Miles Traveled," *Applied Economics*, Vol. 27 (1995), pp. 643–656.

⁵ H.A. Kayser, "Gasoline Demand and Car Choice: Estimating Gasoline Demand Using Household Information," *Energy Economics*, Vol. 22 (2000), pp. 331–348.

⁶R. Schalensee and T.M. Stoker, "Household Gasoline Demand in the United States," *Econometrica*, Vol. 37 (1999), pp. 645–662.

⁷ *Ibid.*

⁸ *Ibid.*

⁹ W.C. Wheaton and L. Rossoff, "The Cyclic Behavior of the U.S. Lodging Industry," *Real Estate Economics*, Vol. 26 (1998), pp. 67–82.

¹⁰ See, for example: E. Fijil, M. Khaled, and J. Mak, "The Exportability of Hotel Occupancy and Other Tourist Taxes," *National Tax Journal*, Vol. 38 (1985), pp. 169–177; and S.J. Hiemstra and J.A. Ismail, "Incidence of the Impacts of Room Taxes on the Lodging Industry," *Journal of Travel Research*, Vol. 31 (1993), pp. 22–26.

¹¹ L.T. Damonte, D.J. Domke-Damonte, and S.P. Morse, "The Case for Using Destination-level Price Elasticity of Demand for Lodging Services," *Asia Pacific Journal of Tourism Research*, Vol. 3 (1998–1999), pp. 19–26.

age hotel occupancy dropped by .44 percent.¹² A more recent study found four demographic factors that greatly affect lodging demand—namely, income, age, gender, and occupation.¹³ Households comprising members between 35 and 54 years old and with an annual income over \$35,000 are one of the most important segments to the lodging industry. In addition, on average, lodging demand by men is greater than that of women, and, not surprisingly, managers and professionals constitute the most substantial portion of lodging demand. Other studies have examined general notions of demand, such as ways to calculate a property's unconstrained demand levels.¹⁴ Still other studies have examined demand from a travel perspective, examining the role of consumer income, pricing, and transportation costs in predicting tourism demand.¹⁵ To date, however, no study has specifically examined the relationship between gasoline prices and lodging demand.

Our literature review implies that different consumers may have different price elasticities for gasoline. That is, different consumer groups will change their demand in different ways in response to increases in the cost of gasoline. For example, as already mentioned, consumers with relatively low incomes may be affected to a greater degree by gasoline-price increases than will consumers with relatively high incomes. Additionally, high-volume gasoline consumers will also

be more affected by price changes than will low-volume gasoline consumers. Thus, the importance of gasoline prices to lodging demand may be particularly evident in connection with price-sensitive customers.

Gas Prices and Demand: The Study

Using data on gasoline prices and branded-hotel rooms sold over the 13-year period of January 1988 through December 2000, we conducted a

Given that price-sensitive consumers reduce gasoline consumption when the price increases, one would, by extension, expect those consumers to curtail their travel plans.

study to explore the relationship between these two factors. The lodging data consist of monthly rooms sold at the property level. The number of properties varied by year; in 2000, for instance, there were 20,602 properties in the sample. This data set was obtained from Smith Travel Research (STR), an independent research organization that tracks lodging performance for all major North American chains. The data used for this study describe over 98 percent of the nation's brand-hotel inventory, and the sample is thus fully representative of the entire U.S. lodging population for brand-name hotels. Exhibit 1, on the next page, provides the details of the regression equation we used to explore the relationship between gasoline prices and hotel demand.¹⁶

We included two control variables in the equation, which we anticipated would explain a substantial degree of the variation in lodging demand. First, to capture the influence of general economic prosperity on lodging demand, we in-

¹² S.J. Hiemstra and J.A. Ismail, "Occupancy Taxes: No Free Lunch," *The Cornell Hotel and Restaurant Administration Quarterly*, Vol. 33, No. 5 (October 1992), pp. 84–89.

¹³ R.R. Palakurthi and S.J. Parks, "The Effects of Selected Socio-demographic Factors on Lodging Demand in the U.S.A.," *International Journal of Contemporary Hospitality Management*, Vol. 12 (2000), pp. 135–142.

¹⁴ E.B. Orkin, "Wishful Thinking and Rocket Science: The Essential Matter of Calculating Unconstrained Demand for Revenue Management," *The Cornell Hotel and Restaurant Administration Quarterly*, Vol. 39, No. 3 (August 1998), pp. 15–19.

¹⁵ See, for example: G.I. Crouch, "The Study of International Tourism Demand: A Review of Findings," *Journal of Travel Research*, Vol. 33 (1994), pp. 12–23; C. Lim, "A Meta-analytic Review of International Tourism Demand," *Journal of Travel Research*, Vol. 37 (1999), pp. 273–284; and B. Wicks, M. Uysal, and S. Kim, "The Effect of Lodging Prices on Visitors' Demand," *Hospitality Research Journal*, Vol. 17 (1994), pp. 51–61.

¹⁶ Continuous variables were transformed to natural logs (lns) so that their coefficients could be interpreted as elasticities, or the percentage change in rooms sold for a 1-percent change in the price of gasoline. Thus, the dependent variable in this equation is the natural log (ln) of rooms sold. The independent variables include the natural log (ln) of gasoline price, the natural log (ln) of GDP, and a trend variable.

EXHIBIT 1

Regression equation for the study

The following equation shows the general form of the regression equation used to estimate the relationship between gasoline prices and hotel rooms sold:

$$\ln(\text{ROOMS SOLD})_{t,s}^{l,m} = \alpha^{l,m} + \beta_1^{l,m} \text{TREND}_t + \beta_2^{l,m} \ln(\text{GDP})_t + \beta_3^{l,m} \ln(\text{GAS PRICE})_{t,s}$$

where:

- l denotes urban, suburban, highway, and resort locations
- m denotes the upper upscale, upscale, mid-price with food and beverage, mid-price without food and beverage, and economy market segments
- t denotes the years from 1988 through 2000
- s denotes states from 1 through 50

$$\ln(\text{ROOMS SOLD})_{t,s}^{l,m}$$

is the natural log of the sum of rooms sold across properties in year t , in state s , by location l , and by market segment, m

$$\text{TREND}_t$$

is a trend variable taking a value of 1 in 1988 and incremented by 1 for each year t , thereafter

$$\ln(\text{GDP})_t$$

is the natural log of gross domestic product in constant 2000 dollars in year t

$$\ln(\text{GAS PRICE})_{t,s}$$

is the natural log of the gasoline price in year t for state s in constant 2000 dollars

Note: Ordinary least squares was used to estimate the parameters. The unit of observation is the sum of all properties for a given location type l , market segment m , year t , and state s . The unit of observation was defined at the state and annual levels due to data-availability constraints of the gas-price variable and GDP. Thus, the dependent variable, annual rooms sold, was measured by aggregating the monthly property-level hotel rooms sold by year, state, hotel-location type, and market segment. The key independent variable, gasoline prices, was obtained from the Bureau of Economic Analysis and captures gas prices by state for each of the 13 years. To be consistent with the observational frequency of the control variable, gross domestic product (GDP), we computed the annual average of monthly gasoline prices. Annual GDP was obtained from the Bureau of Economic Analysis. All dollar-denominated variables were converted to year-2000 real dollars using the Consumer Price Index (CPI), obtained from the U.S. Bureau of Labor Statistics.

cluded GDP in the equation. A failure to take general economic conditions into consideration would clearly result in a misspecified equation. As existing work on lodging demand suggests, GDP is a key variable in explaining lodging demand.¹⁷ Second, we included a time-trend variable to capture the effects of unobserved time-based influences that may influence lodging demand. The use of a time-trend variable is common in microeconomic demand studies.¹⁸ The trend variable in demand studies serves as a proxy for variables that are correlated with time but are not directly observable. In this analysis, the trend variable may serve as a surrogate measure for changes over time in consumers' preferences for travel.

To ensure that the independent variables in the equation and the sample design were not distorting the statistics of the regression equation, we examined issues of multicollinearity,¹⁹ autocorrelation,²⁰ and heteroscedasticity.²¹ Results confirmed that none of these matters affected the regression results.

¹⁷ L. Canina and S. Carvell, "Lodging Demand for Urban Hotels in Major Metropolitan Markets," *CHR Report* (Ithaca, NY: Cornell University, 2003).

¹⁸ See, for example: W.H. Greene, *Econometric Analysis* (Upper Saddle River, NJ: Prentice-Hall, 2000).

¹⁹ Although multicollinearity is always present in regression models (since most data will never be orthogonal), the issue is whether the gasoline-variable-parameter estimates should be questioned. We tested the severity of multicollinearity in the equation, as suggested by: D. Belsley, E. Kuh, and R. Welch, *Regression Diagnostics: Influential Data and Sources of Collinearity* (New York: Wiley, 1980). We also tested GDP and the trend variable by running the regression with each of those factors removed. The relationship between gasoline prices and lodging demand did not change in any significant manner or direction from the overall model in those instances.

²⁰ When we tested autocorrelation using the Durbin-Watson test statistic, the computed D-statistic was 1.76, not within the range of the lower bound of .50 and upper bound of 1.56—indicating that autocorrelation was not a concern here.

²¹ The White estimator of the covariance matrix of the least squares estimators was computed, under the assumption that heteroscedasticity exists. The differences in the estimated standard errors were minimal. For more information, see: H. White, "A Heteroscedasticity-consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity," *Econometrica*, Vol. 48 (1980), pp. 817–838.

This study has the benefit of being based on data from the entire U.S. lodging industry over a 13-year interval, a period during which gasoline prices exhibited sharp drops (e.g., following the first Gulf War) and spikes (similar to the spike that occurred in 2002). Yet because the data were gathered year by year, we are able to present the pattern of the relationship over a reasonably extended time. As a consequence, we offer a picture of hospitality-industry demand that is more than a snapshot in time and one that captures both dramatic and subtle shifts in gasoline prices.

The Results: Gas Prices Related to Rooms Demand

According to the results of our study, demand for lodging products drops as gasoline prices rise—and that relationship is significant. Specifically, the results show that a 1-percent increase in gasoline prices is associated with a 1.74-percent decrease in lodging demand.²² Thus, the results reveal that the cost of gasoline is, as many believe, an important factor in shaping consumer demand for hotel products. To further refine those data, as well as to explore this intuitively logical finding in greater detail, we turn to the effects of gasoline prices on hotel-room demand in various locations and market segments.

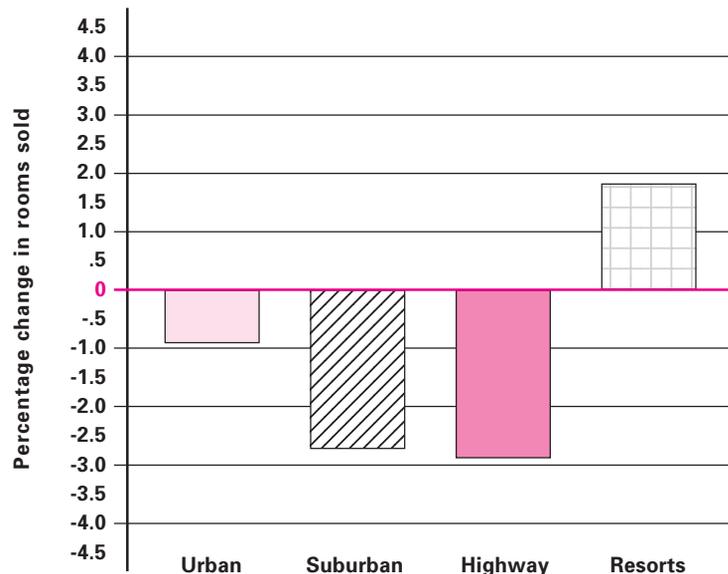
The Effects of Location

Urban areas offer travelers a variety of different forms of transportation. In contrast, properties in highway sites are accessible only by automobile—indeed, those hotels were developed because of automobile travel. The degree to which gasoline prices and room demand are related is likely to depend on whether a particular hotel location can be reached by common carrier or whether one must drive a private automobile to get there. To explore this issue, our study examined whether gasoline-price changes have a greater association with lodging demand in exclusively automobile-related locations than they do in locations served by several modes of travel.

²² The overall regression equation yielded a significant beta coefficient of -1.74 for rooms demand regressed on gas prices holding constant GDP and taking into consideration a trend line. This equation was significant at $p < .001$; the F-statistic for this regression is 106.27.

EXHIBIT 2

Effect of gasoline-price changes on hotel rooms sold by location



Hurting highway hotels. As Exhibit 2 shows, and as one might expect, lodging demand for hotels in highway and suburban locations is indeed more sensitive to gasoline-price changes than is lodging demand for hotels in urban and resort destinations. The strongest relationship between gas prices and lodging demand was found for hotels in highway locations, followed closely by hotels in suburban locations, while the weakest relationship was found for hotels in urban locations.²³ For example, a 1-percent increase in gasoline prices was associated with a 2.89-percent decrease in lodging demand for highway hotels and a 2.70-percent decrease for suburban hotels. But that same 1-percent gasoline-price increase was associated with only a .91-percent decrease in demand for urban hotels. Thus, we conclude that gasoline-price increases disproportionately affect demand for highway hotels, followed by suburban and then urban hotels.

²³ In every case, test statistics show that the gas-price coefficient is significantly different from zero at the .01 confidence level.

EXHIBIT 3

Effect of gasoline-price changes on hotel rooms sold by segment

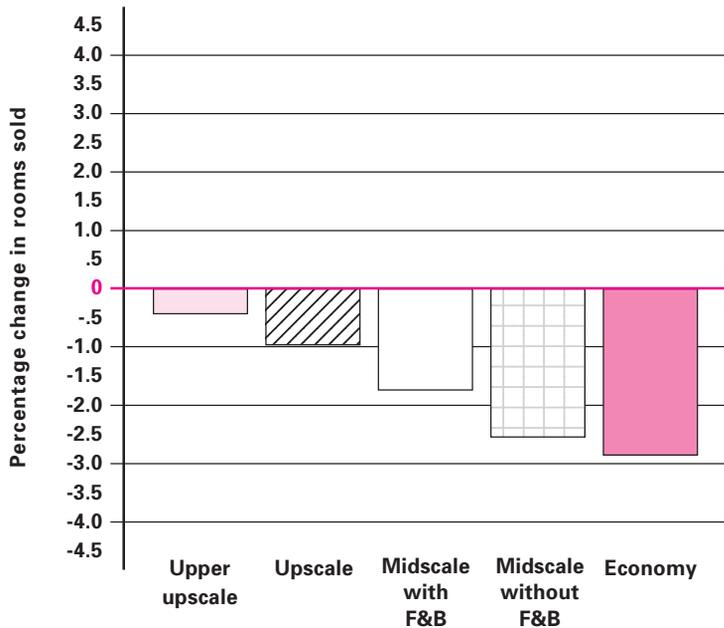
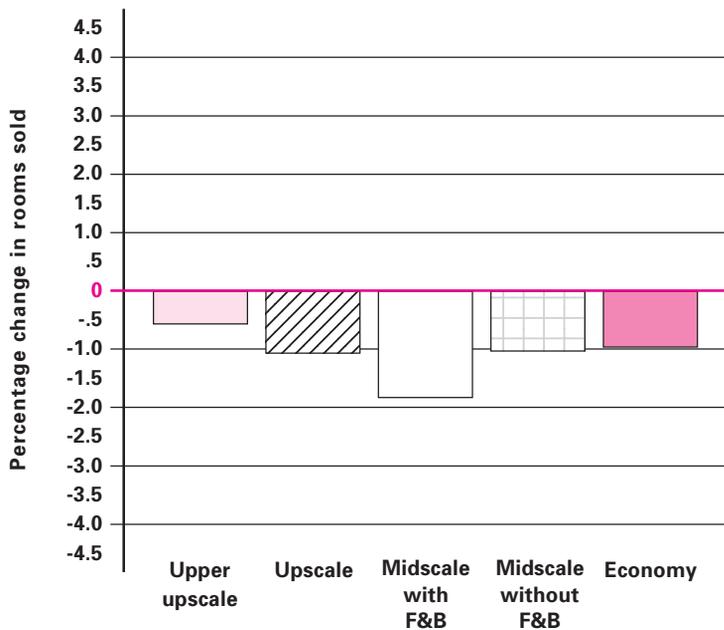


EXHIBIT 4

Effect of gasoline-price changes on urban-hotel rooms sold by segment



Resorts not harmed. An unexpected finding was that gas prices and lodging demand in resort locations exhibited a positive and significant relationship. Our data showed that a 1-percent increase in gasoline prices was associated with a 1.85-percent increase in resort lodging demand. This positive relationship is counterintuitive, most likely suggesting that resort guests may be less price sensitive than those patronizing other segments. Moreover, when gasoline prices rise, travelers who are at a resort on convention or group business may extend their trip as a family vacation (rather than take a separate trip). Whatever the explanation, this unanticipated positive relationship bears further investigation and represents a point from which to develop future research.

Price Segments Matter

To determine whether the relationship between gas-price increases and lodging demand also varies by lodging-price segments, we divided our sample according to STR's segmentation scheme (i.e., upper upscale [luxury]; upscale; full-service midscale [i.e., with food and beverage], limited-service midscale [i.e., without F&B]; and economy) and examined the relationships separately for each segment. In doing so, we assumed that price segment would act as a reasonable proxy for the income levels of the hotels' guests and reflect their sensitivity to rising fuel prices. Using the same equation as the one in Exhibit 1, presented earlier, we performed separate regression analyses for hotels in each of the five price segments.

Segments are key. Exhibit 3 shows that rising gas prices have the biggest effect on lodging demand for economy hotels, followed by limited-service midscale hotels, full-service midscale hotels, and, finally, upscale hotels.²⁴ Demand for upper upscale hotels (although economically substantial) was not significantly related to gas prices,

²⁴ The results revealed a -2.80 coefficient for hotels in the economy segment, suggesting that a 1-percent increase in gas prices is associated with a 2.80 reduction in lodging demand for economy hotels. Results also revealed a -.98 coefficient for hotels in upscale markets, suggesting that a 1-percent increase in gas prices is associated with an almost 1-percent reduction in lodging demand.

statistically.²⁵ The pattern of results shows that demand for hotels in low-price segments is more sensitive to gasoline-price fluctuations than is demand for hotels in high-price segments.

The results imply that consumers' purchasing power appears to fall when gas prices rise, which in turn affects total travel spending, particularly that of price-sensitive guests at economy and midscale hotels. The study's results help to explain why hoteliers express worry when prices rise at the gas pumps as the summer vacation season begins. By the same token, falling gasoline prices also suggest that demand for lodging will rise, particularly in the low-end industry segments.

The Combined Effects of Location and Segment

Our study's final analyses explored the relationship of gasoline prices to demand for each of the five market segments in each of four locations. We first categorized hotels according to their location, and then subdivided those location groups into the aforementioned price segments. The purpose of these analyses was to determine the strength of the relationship between gasoline prices and demand for specific hotel segments within the four different types of locations. We detail the results separately for each of the four locations.

Exhibit 4 shows that demand for urban hotels in all but the highest-price segment is negatively affected by rising gas prices.²⁶ The most significant relationship for urban hotels was found for full-service midscale hotels, and that pattern was similar in suburban and highway locations (see Exhibits 5 and 6).²⁷ Demand for

²⁵ The *t*-statistic for the gas-price coefficient was -1.41 for upper-upscale hotels. The gas-price coefficient was significantly negative for the other price segments at the .01 significance level.

²⁶ The *t*-statistic for the gas-price coefficient was -1.08 for upper-upscale hotels in urban locations. The gas price coefficient was significantly negative for the other price segments in urban locations at the .05 significance level.

²⁷ The *t*-statistic for the gas-price coefficient for upper-upscale hotels was -0.26 in suburban locations and 0.10 in highway locations. The gas-price coefficient was significantly negative for the other price segments in suburban and highway locations at the .01 significance level.

EXHIBIT 5

Effect of gasoline-price changes on suburban-hotel rooms sold by segment

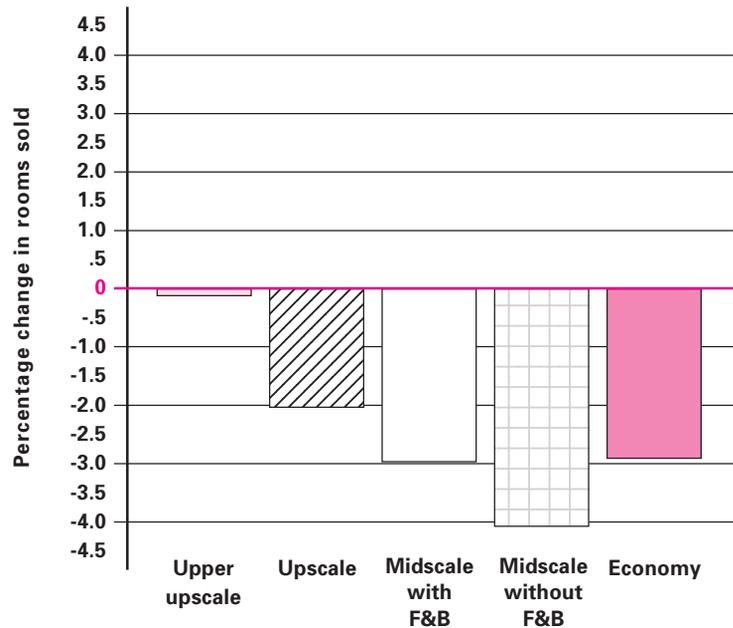


EXHIBIT 6

Effect of gasoline-price changes on highway-hotel rooms sold by segment

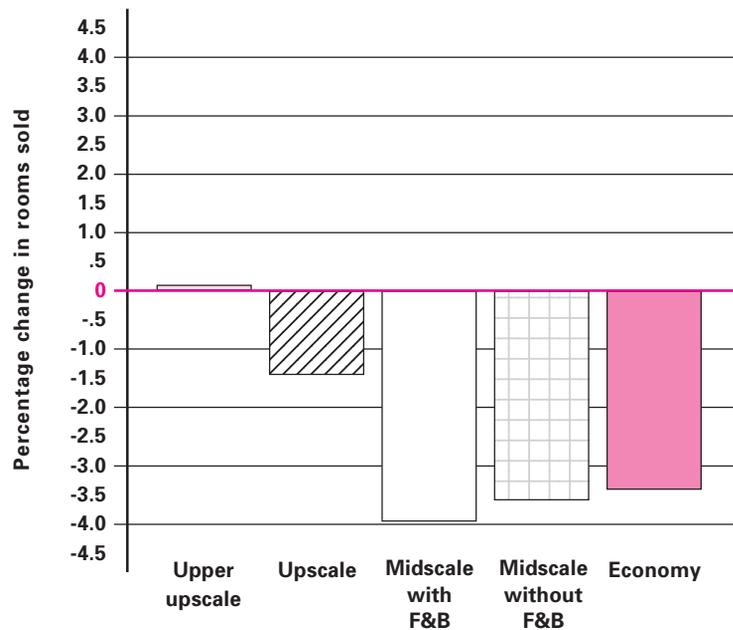
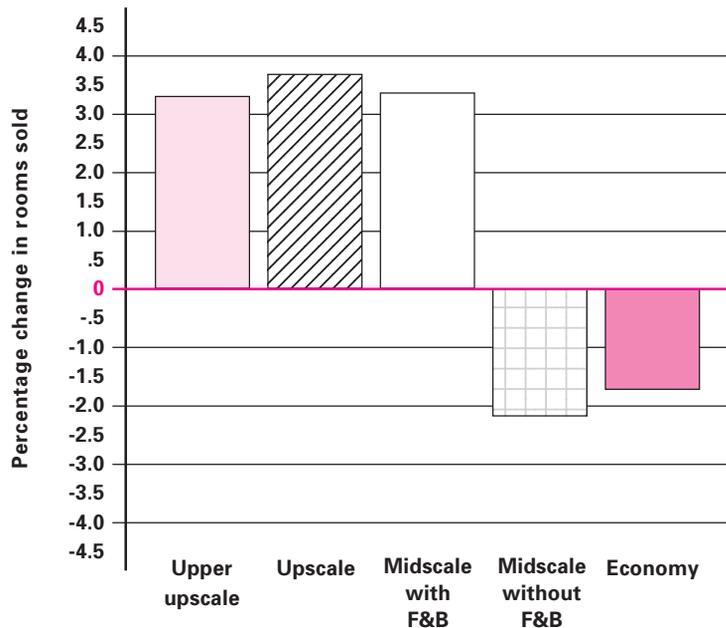


EXHIBIT 7

Effect of gasoline-price changes on resort rooms sold by segment



upper-upscale hotels in all locations was not significantly related to gas prices.

Looking closely at the magnitude of effect, midscale hotels (to repeat) were most strongly affected by gasoline prices in both suburban and highway locations. For midmarket properties in highway locations, a 1-percent increase in gasoline prices was related to a 3.97-percent reduction in lodging demand for full-service properties and a 3.58-percent reduction in lodging demand for limited-service properties. Economy hotels in suburban locations experienced a 2.89-percent reduction in lodging demand, while economy hotels in highway locations experienced a 3.35-percent reduction in lodging demand.

As we report for the overall sample, demand for high-end resorts showed a positive, significant relationship to gas prices (see Exhibit 7).²⁸ Economy and limited-service midscale resorts,

²⁸ The *t*-statistic for the gas-price coefficient at resort locations was 4.41 for upper-upscale and 3.19 for midscale with food and beverage—all statistically different from zero at the .01 significance level.

however, experienced falling demand when gas prices rose, consistent with the results of low-price segments in the other locations.²⁹ Interestingly, the strongest association was found in upscale resorts, where a 1-percent increase in gas prices was associated with a 3.67-percent increase in demand. This finding is particularly noteworthy, since luxury hotels in other locations did not appear to be sensitive to gasoline-price changes in either direction. Thus, rising gas prices are associated with rising demand for luxury resorts, a curious result worthy of future investigation.

In summary, economy and midscale hotels are most affected by gasoline-price changes—particularly in highway and suburban locations. Only high-end resort hotels enjoyed positive effects from rising gas prices. For the most part, luxury hotels are not affected one way or the other by gasoline prices, adding credibility to the logic that those who frequent luxury hotels are less price sensitive than are guests in other segments. For operators in urban settings, the availability of alternative forms of transportation may to some degree diminish the effects of gasoline-price changes. However, the study shows that fuel-price increases are felt in urban settings, mostly at the top end of the midscale segment and in upscale hotels.

Guidance for the Hospitality Industry

Our findings suggest that when gas prices are rising, U.S. lodging demand is generally declining. We now know the magnitude of this relationship on a percentage basis. However, our findings also suggest that not all lodging operators need to worry that jumps in gasoline prices will diminish their demand. The demand base for urban hotels is not as strongly associated with gas-price fluctuations, possibly due to the fact that consumers in these locations rely on public modes of transportation such as taxis, subways, or shuttles. On the other hand, the effects of gas-price changes are magnified in hotels located along highways and outside major metropolitan locations—in short, those that depend on automobile access.

²⁹ The gas-price coefficient was significantly negative at the .05 level.

The results of this study imply that the presence of few transportation alternatives may contribute to declines in rooms sold when gasoline prices change. In addition, travelers who stay in economy and midscale hotels may consider gasoline price to be a key factor in their consumption decisions and may curtail their use of many goods and services, including travel, if their purchasing power decreases because their transportation costs increase. We offer these ideas as speculation and areas regarding which to direct future demand-based, economic studies.

This consumer logic may have been the catalyst for the Choice Hotels gasoline-voucher offer.³⁰ The chains involved operate in segments most damaged by increases in gasoline prices. For operators in these segments, creating innovative incentives that take gasoline prices into consideration may be more beneficial than might be assumed at first glance. Choice was innovative in its efforts, but it is interesting to note that it was the only hotel chain that developed such a campaign in summer 2002. If the connection between gas prices and demand is as strong as we found in this study, it would seem likely that more chains should engage in such marketing efforts. Hence, we wish to stress that it is important for owners and operators of economy, highway, and suburban hotels to be aware that they are the most susceptible to gas-price changes. Given that relationship, they should seriously consider developing proactive strategies to adjust promotional initiatives when automobile-travel costs change.

In addition to increasing their sensitivity to this economic signal, hotel operators and owners in the segments at risk might also consider sharing the results of this study with others in travel-related industries to help anticipate and strategically plan for changes in travel costs. States that are particularly hard hit by fluctuations in gasoline prices may wish to work with tourism bureaus to offer incentives for in-state travel. While Florida's tourism officials may already appreciate the importance of this idea, we are aware of few states that have explored ways to minimize the effects of rising fuel costs on the state's

travel industry. In addition, hotels might cooperate with other tourism groups and local or state governments to develop programs to provide low-cost transportation alternatives for the hardest-hit areas. Efforts to control transportation costs by a variety of different constituencies in the tourism sector could enhance lodging demand and benefit a range of different stakeholders.

As the hospitality industry becomes more sophisticated in data capture and management, a fruitful area in which to extend this research would be to develop and test a causal model that includes customer demographic and business-mix profiles as it examines hospitality-demand patterns in response to economic shifts. Such research could be useful since the results presented in this study showed that the relationship between gasoline-price changes and lodging demand differs across lodging segments. Such work could extend the contribution of this study by exploring the effects of gas prices on travel decisions for both leisure and business travelers. While this preliminary study is not causal, and additional research is necessary to explicitly determine the causal connections between gasoline-price fluctuations and lodging demand, what we do now know is that gasoline-price fluctuations and room demand are associated with one another in a way that has potentially important and dramatic implications for many hotel operators. The findings in this study suggest a relationship that cannot be ignored, especially by those located in low-end segments and in highway and suburban locations. Furthermore, there is hope that the negative influences of high gas prices can be addressed in a way that begins to curb the effects of this important economic factor. ■

Pictured from top to bottom:

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³⁰ Choice Hotels press release, www.hotelresource.com, as viewed on 5/10/2000.