HVS

MARKET REPORT

How Convention Centers Influence Hotel Markets

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Convention centers rarely generate profits and even if they do these profits are usually insufficient to provide a reasonable return on investment. Consequently, private sector convention center development is quite rare. Instead, the public sector—state and local governments—justify investment in convention centers by recognizing the significant external benefits convention activity creates in their communities. Convention centers support a variety of tourist-related industries including lodging, restaurant, catering, transportation, retail and other industries. These external benefits are typically measured by estimating the number of new visitors generated by the convention center and multiplying that number by their estimated spending. While this commonly-used, simple method may provide a rough approximation of convention center related spending, it does not capture the more complex and subtle impacts of convention center activity on a lodging market.

The simple method of spending estimation misses two important and dynamic effects that convention center generated room nights may have on hotels: 1) the displacement of non-convention center lodging demand and 2) effects on the prices of hotel rooms. Furthermore, the strengths of displacement and price effects depend in part on factors of market supply and demand that may be unrelated to the level of convention center demand in the market.

Displacement Effects

In periods of peak demand a hotel market may reach capacity. Even during years of low average annual market occupancy like the current economic environment, a “feast or famine” pattern of lodging demand may emerge. A single large “city-wide” convention or other tourism event can push demand above supply on any given day. The result is the displacement of lodging demand that otherwise could have been in the market. So the impact of an individual convention center event on lodging demand should be more accurately measured as net of the displaced demand. For example, if an event generates 10,000 gross group room nights but displaces 2,000 room nights in all other segments, the net impact would be only 8,000 net new room nights.

Unfortunately, displacement effects cannot be directly measured since no one collects data on unaccommodated demand. HVS Convention, Sports & Entertainment has devised a method of measuring net new lodging demand generated by convention centers through the use of a regression analysis. Using historical data on daily lodging demand combined with data on convention center daily event activity, one can build a regression model that predicts the net impact of convention center events.

Lodging markets are in some ways highly predictable. While it is difficult to pin down annual occupancy trends, the seasonal and daily patterns of demand vary little from year-to-year. In almost any market, a regression analysis that uses daily room night demand data can model the market with a surprising degree of accuracy. The days of the week and the months of the year serve as independent variables and explain nearly all the variance in daily room night demand. Adding another independent variable that represents daily city-wide convention center activity can further refine a seasonal model and provide an estimate of the average net impact of convention center events on lodging demand. A regression model would appear as some variant of the following equation.

$$Y_i = \beta_1 X_i + \beta_i M_i + \beta_i W_i + \varepsilon_i$$

Where:
Y = Number of Occupied Rooms (the dependent variable)
β = coefficients
X = City-wide Convention Event (yes or no)
M = Month of the year
W = Weekday
ε = random error term
$_i$ = number of observation

The coefficient β_1 is of most interest in this model because it can be interpreted as the average net change in room nights that result from a convention center event. Furthermore, a regression analysis will produce statistical measures of the significance of this variable and a calculation of confidence intervals. In other words, the model will tell us how accurate our predictions are and provide a reasonable range of estimates.

HVS has tested these types of regression models in several lodging markets, where they produced statistically significant results. These models work for multiple years of historical data, but they can also be limited to a single year of data. Running models for individual years and comparing the value of the β_1 coefficient in each year has the benefit of revealing how displacement effects may vary with overall levels of annual occupancy.

Our hypothesis of displaced demands predicts that in years of high occupancy the displacement effects would be larger (the coefficient β_1 is smaller) than in years of low occupancy. In markets where HVS has had sufficient data to run models for multiple years, this predicted change in the displacement effect occurs. This leads to the conclusion that convention centers can have a stabilizing effect on a lodging market. In periods of high demand when additional convention center demand is not needed, the effects are smaller. But in periods of low demand the impacts of convention centers are larger.

Price Effects

Price effects (as measured by average daily room rate or “ADR”) can also be estimated using seasonal regression models, where ADR becomes the dependent variable (Y). Our hypothesis is that ADR in the overall market would increase during convention events due to higher overall demand in the market. In a price model, the coefficient β1 may be interpreted as the change in ADR caused by a convention center event. Price effects often go unnoticed in economic impact studies, but

they are important because convention center events can have the impact of increasing room rates in the market as a whole, not just in the narrower group segment. In every market in which HVS has shown significant displacement effects, we have also demonstrated corresponding price effects.

Conclusion

Measurement of displacement and price effects is important to decision makers in state and local governments who are trying to weigh the benefits of convention center activity against the development risks and costs. Analysts forecasting future lodging demand in convention markets should also think about price and displacement effects and not rely only on readily available estimates of gross convention center room nights as an indicator of induced convention center demand. Hotel operators and owners creating strategic plans should recognize the important stabilizing influence convention center activity may have in the lodging markets, which may lead to the adoption of a long-term strategy of devoting room blocks to convention center events.