Hotel Occupancy: Is the Three-Year Stabilization Assumption Justified?

Cornell Hospitality Quarterly
52(2) 176–180

DOI: 10.1177/1938965510393733
http://cqx.sagepub.com

By John W. O'Neill

Abstract

Corporate and private hotel developers, appraisers, and consultants must make an assumption regarding the period of time it will take a new hotel to reach a stabilized occupancy level. Historically, most developers of future hotel occupancy estimates have assumed a three-year build-up period, although empirical research has not tested this assumption. This research project tests that assumption by analyzing the actual occupancy rates of 3,699 hotels that opened during the previous economic cycle. In addition, this project evaluates the stabilization period based on hotel type, location, size, and service level. This exploratory study develops guidance for analysts of hotel occupancies by evaluating the absolute level of stabilized occupancy by hotel type in an effort to assist with refining the accuracy of prospective financial analyses for new hotels. While this project finds support for the use of a three-year occupancy build-up, it concludes that certain hotel types and locations stabilize more slowly or more quickly, whereas hotel size and service level are not significant determinants of stabilization period. Also, this project finds that certain hotel types stabilize at significantly higher occupancy rates than others.

Keywords

hotel development, feasibility analysis, stabilized occupancy

Feasibility studies for many different types of proposed commercial real estate projects include an assumption regarding the period of time it will take the project to reach a stabilized operating level (Eckenstahler 1994).[1] Stabilized operating level is usually considered to be that level of operating volume at which the occupancy percentage ceases to increase year over year (Eckenstahler 1994). Feasibility studies for new hotels generally include prospective financial analyses that assume the proposed property will build up to a stabilized level of occupancy in three years (Rushmore and Baum 2001; Andrew and Schmidgall 1993; Overstreet 1989a), meaning occupancy is expected to stabilize during the third year of operation, although sometimes a two-year (Overstreet 1989a) or four-year build-up may be assumed (Ransley and Ingram 2004). This exploratory study endeavors to provide guidance to analysts of hotel occupancies, such as corporate and private hotel developers, appraisers, and consultants, by empirically examining the actual occupancy rates of 3,699 hotels that opened during the previous economic cycle. In so doing, this study analyzes actual specific hotel property stabilization periods.

Anticipated hotel occupancy levels are customarily developed from a penetration analysis whereby a hotel is expected to capture a percentage of its fair share of lodging demand in various market segments (e.g., commercial, leisure, and group), taking into account historical and anticipated levels of demand and demand growth in each of those market segments (Ransley and Ingram 2004; Rushmore and Baum 2001). Fair share is a percentage expressed as the subject hotel's number of guest rooms divided by the number of guest rooms available in the subject hotel's competitive market. Penetration represents the extent (expressed as a percentage) to which the subject hotel achieves its fair share within each market segment. Within a penetration analysis, the subject hotel's penetration rates are normally assumed to experience annual increases (and possibly intermittent decreases) until stabilization occurs within each market segment. Generally, a new property is projected to have penetration factors that start below the long-term average and increase during the first few years of operation as a property captures an increasing share of market demand. This level of stabilization of penetration of lodging demand, along with anticipated stabilization of lodging demand available in the competitive market, results in an anticipated level of occupancy stabilization for the subject hotel. Thus, one can assume that the number of years required for the subject property to reach its stabilization of penetration will also typically be the number of years required for it to reach stabilized occupancy. In some cases, when market occupancy is anticipated to change in years subsequent to the subject hotel's expected stabilized penetration, the subject hotel will reach stabilized occupancy after it reaches stabilized penetration.

Historically, the concept of stabilized occupancy has generally excluded from consideration any abnormal relationships between supply and demand (Rushmore and Baum 2001), such as latent demand due to circumstances that may have been unforeseen at the time the prospective financial analyses were prepared. Stabilized hotel operating performance is generally considered to be a point of equilibrium when it is not logical to assume continuing increases in occupancy. This situation occurs if lodging demand continues to grow, other new hotel rooms are eventually expected to enter the market, thus limiting occupancy increases of any individual hotel (Ransley and Ingram 2004). Assumptions regarding future occupancy estimates are important because the feasibility and financial success of hotels are extremely sensitive to occupancy (Overstreet 1989b). However, although it has been suggested that factors such as a hotel's location may influence its stabilized level of occupancy (Rushmore 1992), there appears to be no empirical research that has tested long-held assumptions regarding the period of time it may take a hotel to reach a stabilized operating level.

Hotel feasibility studies would benefit from rigorous research regarding the typical assumptions they contain (Beals 1994). More sophisticated analyses regarding the period of time hotels take to reach their stabilized operating level could not only result in more accurate operating forecasts, but more sophisticated analyses could also potentially help to reduce hotel restructurings and foreclosures brought on in part by inadequately supported prospective financial analyses (Beals 1994).

Analyses of Data

The purpose of this article is to analyze the actual occupancy build-up of new hotels in the United States over the past several years. To do so, this research project makes use of what is probably the most complete data base of U.S. hotel performance, namely, the Smith Travel Research (STR) database. For this study, STR graciously provided data regarding annual occupancy levels for consecutive years during the seven-year economic cycle of 2002 through 2008 for 3,699 newly opened hotels.

For this exploratory study, stabilized occupancy was considered to be the first high point in annual occupancy percentage when occupancy rate no longer increased by at least one percentage point versus the previous year, and stabilized year was considered to be the first year the hotel reached its stabilized occupancy level. Since this definition required a full year of stabilized operating performance, and because STR data represent full calendar years, the analysis could determine the stabilized year in half-year increments. This was possible because the STR data also included the month and year that each hotel opened. Since it was necessary to examine multiple consecutive years of performance to determine the stabilized year, hotels that opened between 2001 and 2006 were considered. For the purposes of this study, each hotel's first calendar year of operation was considered to be a year only if it opened during the first quarter of the year (i.e., January through March). Hotels that opened during the middle two quarters of the year (April through September) were considered to have a half-year of operation during their first calendar year. If hotels opened during the final quarter of the year (October through December), their first calendar year (or stub year) was not considered to be an operating year. The average property had 107 guest rooms (standard deviation [*SD*] = 93 rooms) with a mean stabilized occupancy percentage of 71.96 percent (*SD* = 9.96 percent).

Is the Three-Year Occupancy Build-Up Supported?

An analysis of the data indicated that the typical 3-year occupancy build-up assumption was supported because the average hotel stabilized in 3.08 years (*SD* = 1.41 years; range = 1-8 years). Occupancy at a total of 61.9 percent of hotels stabilized between 2 and 4 years. Only 6.3 percent of hotels stabilized in 1 year (i.e., their first year of operation), and a mere 0.2 percent of hotels took 8 years to stabilize.

The average hotel achieved an annual occupancy percentage of 55.31 percent in its first full year of operation, 65.54 percent in its second year, and 71.96 percent in its third year. Stated another way, the average hotel achieved 76.86 percent of its long-term average occupancy during its first year of operation (and hence 76.86 percent of its long-term penetration mathematically based on a long-term penetration of 100.00 percent), 91.08 percent in its second year, and 100.00 percent in its third year. The first, second, and third years represent many different calendar years for different hotels in the study. Thus, these figures account for hotel performance during the different economic conditions occurring in the multiple years of study. Exhibit 1 presents average occupancy by year.

Exhibit 2 presents a histogram of stabilized years for the sample. Exhibit 2 indicates that although the mean stabilization period was 3.08 years, many hotels stabilized more quickly or slowly. Therefore, subsequent analyses focused on examination of stabilization period by hotel type.

Hotel Type Matters

The STR data indicate each hotel's scale type as in luxury, upper upscale, upscale, midscale with food and beverage, midscale without food and beverage, economy (based on the relative guest room pricing level of each hotel chain), and independent. An analysis of variance (ANOVA) indicated

Exhibit 1:
Average Occupancy by Year

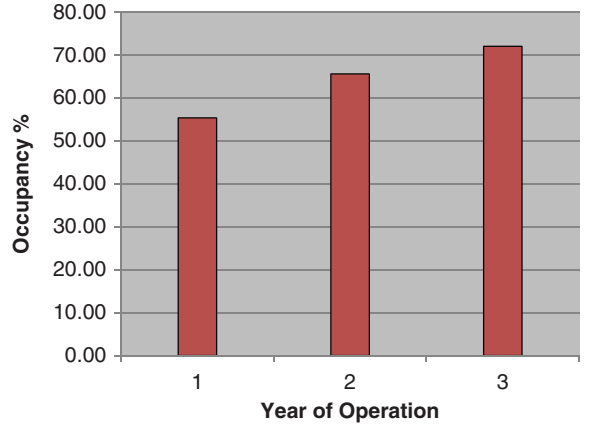
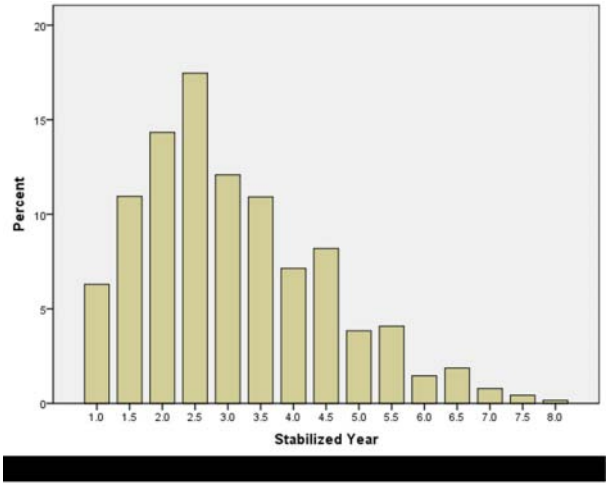


Exhibit 2:
Year of Stabilized Occupancy



there were significant differences in the length of time it took hotels to stabilize based on scale ($F = 5.57$, $p < .001$). Based on post hoc statistical tests (Tukey tests), stabilization of luxury hotels (3.31 years), upper upscale hotels (3.35 years), and independent hotels (3.32 years) was significantly slower than that of upscale hotels, which stabilized quicker than any other hotel type with a mean of 2.88 years. In other words, upscale hotel brands, such as Courtyard by Marriott and Hilton Garden Inn, reached their stabilized occupancy quicker than their more luxurious counterparts. A number of explanations could exist for this difference. For example, hotels typically appealing to more affluent travelers may take more time to build their reputations and customer bases within their local markets. Other explanations could be based on the number of luxurious hotels located in the market or based on the flags or affiliations of those luxurious hotels.

Another way STR data indicate hotel type is based on whether the hotel is an extended-stay property (a hotel catering to long-term guests). Of the 3,699 hotels in the sample, 546 were classified as extended-stay (such as Residence Inns or Homewood Suites) and 3,153 were not extended-stay hotels. A *t*-test indicated that extended-stay hotels stabilized significantly more quickly than conventional properties. Specifically, Levene's test for equality of variances was significant ($F = 17.98$, $p < .001$), and the average conventional hotel stabilized in a mean of 3.13 years, while the average extended-stay hotel stabilized in only 2.75 years.

The Effects of Hotel Location

Hotels in this study were classified by STR as having location types that were either city, suburban, highway, airport, or resort locations. An ANOVA indicated that location was a significant predictor of stabilization period ($F = 2.60$, $p < .05$). Based on post hoc Tukey tests, airport hotels stabilized significantly more rapidly (2.98 years) than city hotels (3.23 years).

Hotels were also classified by nine different U.S. regions. An ANOVA concluded that region was a significant predictor of the period of time it took properties to stabilize ($F = 5.09$, $p < .001$). Based on post hoc Tukey tests, hotels located in the heavily populated Mid-Atlantic region (New York, Pennsylvania, and New Jersey) stabilized significantly more quickly (2.94 years) than hotels located in the east north central region (Michigan, Wisconsin, Illinois, Indiana, and Ohio), which took an average of 3.23 years to stabilize. Hotels in the east north central region stabilized significantly more slowly than hotels in virtually every other U.S. region.

Hotels were additionally classified based on whether they were located in one of the top twenty-five (largest) markets in the United States. An ANOVA indicated that this factor was a significant predictor of stabilization period ($F = 13.30$, $p < .001$). Based on post hoc Tukey tests, hotels located in the top twenty-five markets stabilized significantly more quickly (3.03 years) than hotels in the smaller market areas (3.36 years). It appears that hotels may stabilize more quickly in more heavily populated, higher-trafficked areas. Future research could endeavor to explain why hotels located in such areas appear to stabilize more rapidly than those located outside such areas.

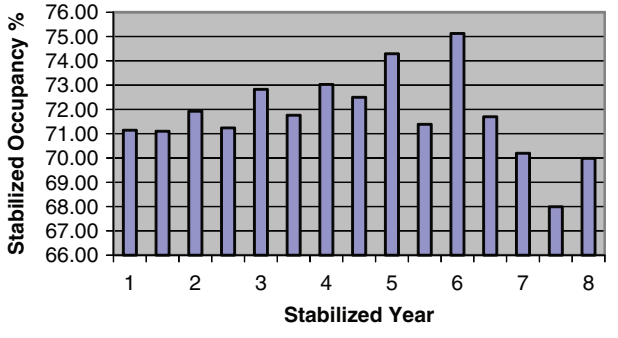
Variables that did not appear to make a difference in the time it took hotels to reach their stabilized occupancy included hotel size in number of guest rooms in the subject hotel property ($p >. 05$) and property service level, that is, whether or not the hotel had any food and beverage outlets ($p > .05$).

These results are summarized in Exhibit 3.

Exhibit 3: Summary of Results

Variable	*f*-Statistic	Significance
Scale type	5.57	<.001
Extended stay	17.98	<.001
Location type	2.60	<.05
U.S. region	5.09	<.001
Top 25 markets	13.30	<.001
Hotel size	0.61	n.s.
Service level	1.42	n.s.

Exhibit 4:
Stabilized Occupancy by Stabilized Year



Occupancy Levels

The absolute stabilized occupancy levels were analyzed to determine whether there were any significant differences in occupancies based on the period of time required for stabilization. Exhibit 4 presents mean stabilized occupancy percentages by stabilized years.

A linear regression analysis ($df = 1, 3{,}697$) indicated that there was a systematic correlation where hotels stabilizing later in their operating life stabilized with relatively higher occupancies ($F = 5.40$, $p < .05$). However, in observing the data, it also appears that hotels stabilizing much later, that is, after seven to eight years, stabilized at relatively lower occupancy rates. Therefore, a quadratic (curvilinear) equation was tested ($df = 2, 3{,}696$), and this curvilinear equation was a superior representation of the data ($F = 5.77$, $p < .01$) This test indicated that hotels stabilizing after a moderate number of years of operation, in this case, three to six years, stabilized at relatively higher occupancy rates. These results suggest that the relatively unusual hotels not stabilizing within three to six years are affected by negative factors not affecting most other properties. Such factors could include branding issues, poor locations, or overbuilt markets.

A *t*-test indicated that extended-stay hotels stabilized at significantly higher occupancy rates than conventional hotels ($F = 48.20$, $p < .001$). While conventional hotel stabilized occupancies were a mean 70.87 percent, extended-stay hotel stabilized occupancies averaged 78.25 percent. It appears that the extended-stay hotel concept may continue to present a compelling business model to hotel developers, at least due to its relatively high occupancy level.

An ANOVA was conducted to evaluate the effects of hotel room prices on stabilized occupancy level. This analysis used the STR pricing levels of luxury, upscale, midprice, economy, and budget, which were determined based on each hotel's relative average daily rate within its respective marketplace. This ANOVA was significant ($F = 11.42$, $p < .001$). Based on post hoc Tukey tests, hotels priced at both the upper (luxury hotels had a mean stabilized occupancy of 73.65 percent) and lower ends (budget hotels had a mean stabilized occupancy of 73.31 percent) of the spectrum of prices stabilized at significantly higher occupancy rates than hotels in the middle of the spectrum (midprice hotels had a mean stabilized occupancy rate of 70.38 percent). This analysis suggests that although previous research concluded that a problem with midprice hotels is that they tend to perform relatively poorly due to being older and more obsolete than higher- and lower-priced properties (O'Neill 2003), even new midprice hotels appear to achieve comparatively low occupancy levels.

Guidance for Developing Prospective Financial Analyses

From this exploratory study, a number of points of guidance can be provided regarding considerations that should be made by those who are charged with estimating the future occupancies of new hotels. It is important to note that this guidance is not intended as a substitute for model-driven analyses of lodging supply and demand conditions for making forecasting decisions. Guidance is as follows:

- In general, the assumed 3-year build-up of occupancies of new hotels is supported by this research. In recent years, the average U.S. hotel stabilized in 3.08 years, and 61.9 percent of hotels stabilized in between 2 and 4 years.
- Luxury, upper upscale, and independent hotels generally appear to stabilize significantly more slowly than upscale hotels.
- Extended-stay hotels stabilize significantly more quickly than conventional hotels. In addition, extended-stay hotels stabilize at significantly higher occupancy rates than conventional hotels.
- Hotels located in downtown areas stabilize significantly more slowly than those located near airports.
- Hotels located in the heavily populated Mid-Atlantic region stabilize significantly more quickly than hotels in the east north central region, which stabilize significantly more slowly than hotels in virtually every other U.S. region. Furthermore, properties located in major metropolitan areas

stabilize more rapidly than those in less populated areas.
- Hotel size (number of guest rooms) and service level (specifically whether it has food and beverage outlets) appear to be unrelated to the period of time it takes the property to stabilize.
- Hotels stabilizing relatively quickly (or slowly) do not appear to stabilize at relatively higher occupancy levels. Hotels stabilizing in three to six years report the highest stabilized occupancy rates.
- Hotels priced at both the upper and lower ends of the spectrum of guest room prices within their markets stabilize at significantly higher occupancy rates than those in the middle of that spectrum.

Conclusions

While it may not be surprising to discover that the assumed three-year hotel stabilization period is supported by this research project, it is surprising that hotels stabilizing relatively quickly do not appear to stabilize at higher occupancy levels. In other words, it is not necessarily a "good" thing for hotels to stabilize quickly. This project found that in general, the most luxurious hotels build their occupancy and stabilize more slowly than hotels in the upscale classification. Furthermore, extended-stay hotels are unique in that they stabilize relatively quickly and they do so at relatively high occupancy rates.

It is important to note that while the subject study involved analyzing hotel occupancies during a relatively long and recent period of time (2002 though 2008), its conclusions are limited based on the time period studied. Its conclusions may or may not apply to any other time period. However, it is important to point out that within the available sample, hotels reached a level of stabilized occupancy during each of the seven different years between 2002 and 2008, indicating that stabilization was achieved during a variety of different economic circumstances. During that time there was high national occupancy growth, modest national occupancy growth, national occupancy stabilization, modest national occupancy decline, and high national occupancy decline. Similarly, there was significant variance in the period of time each hotel in the sample reached stabilization. Therefore, there appear to be many factors other than the effects of national occupancy trends that affect the occupancies of hotels, and those factors certainly include the variables within the hotels themselves.

Hotels located in the Mid-Atlantic region, in major metro areas, and particularly those near airports stabilize more quickly; whereas those in the north central region and in downtown areas stabilize more slowly. Ultimately, the stabilization period for new hotels depends on the specifics of that hotel project. Clearly, each project's location, property type, and price level are primary considerations that estimators of future hotel operating performance should consider when developing estimates of future performance, and this study provides to such analysts guidance to consider that hopefully can have the effect of improving the accuracy of prospective financial analyses and potentially reducing restructurings and foreclosures brought on in part by inadequately supported financial analyses.

Declaration of Conflicting Interests

The author(s) declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The author received no financial support for the research or authorship of this article other than the assistance of Smith Travel Research who graciously provided the data cited herein.

Note

1. Such documents prepared by public accounting firms, or for transactions regulated by the Securities and Exchange Commission, may be referred to as "market studies with prospective financial analyses."

References

Andrew, W. P., and R. S. Schmidgall. 1993. *Financial management for the hospitality industry*. East Lansing, MI: Educational Institute of the American Hotel & Motel Association.

Beals, P. 1994. Rehabilitating hotel feasibility studies. *Real Estate Review* 24 (1): 58-61.

Eckenstahler, C. R. 1994. Generating effective market and feasibility studies from your real estate consultant. *Economic Development Review* 12 (3): 80-83.

O'Neill, J. W. 2003. ADR rule-of-thumb: Validity and suggestions for its application. *Cornell Hotel and Restaurant Administration Quarterly* 44 (4): 7-16.

Overstreet, G. A. 1989a. Profiles in hotel feasibility: A case study of Charlottesville, Virginia. *Cornell Hotel and Restaurant Administration Quarterly* 29 (4): 8-19.

Overstreet, G. A. 1989b. Profiles in hotel feasibility: The consequences of overbuilding. *Cornell Hotel and Restaurant Administration Quarterly* 30 (1): 10-18.

Ransley, J., and H. Ingram. 2004. *Developing hospitality properties & facilities*. Oxford, UK: Elsevier Butterworth-Heinemann.

Rushmore, S. 1992. *Hotels and motels: A guide to market analysis, investment analysis, and valuations*. Chicago, IL: Appraisal Institute.

Rushmore, S., and E. Baum. 2001. *Hotels & motels: Valuations and market studies*. Chicago, IL: Appraisal Institute.

Bio

John W. O'Neill, Ph.D., is an associate professor in the School of Hospitality Management at The Pennsylvania State University (jwo3@psu.edu).