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The Impact of Publicly Subsidized Hotels in the United States on Competing Properties

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The Impact of Publicly Subsidized Hotels in the United States on Competing Properties

Abstract

This paper examines the use of publicly funded subsidies to encourage hotel development in the United States. It reports highlights from the largest and most complete data base assembled on these transactions. This data shows that public subsidies play a significant role in American hotel development and many projects that are in various stages of the development pipeline include the use of public funds. It goes on to present eight impact analyses that look at how key performance metrics of competing hotels in various markets are affected when they have to contend with new entrants that are subsidized. Three markets saw increases in indexed RevPAR, while in the other five markets competing hotels seemed to suffer after the introduction of publicly subsidized competition.

Keywords

Cornell, hotels, public-private partnership, impact study, public subsidies

Disciplines

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ABSTRACT

This paper examines the use of publicly funded subsidies to encourage hotel development in the United States. It reports highlights from the largest and most complete data base assembled on these transactions. This data shows that public subsidies play a significant role in American hotel development and many projects that are in various stages of the development pipeline include the use of public funds. It goes on to present eight impact analyses that look at how key performance metrics of competing hotels in various markets are affected when they have to contend with new entrants that are subsidized. Three markets saw increases in indexed RevPAR, while in the other five markets competing hotels seemed to suffer after the introduction of publicly subsidized competition.

Key Words: Hotels, public-private partnership, impact study, public subsidies

1.1 Introduction

The use of various types of public subsidies and financing to encourage hotel development has become widespread in the United States. Known generically as public-private partnerships (PPPs), we refer to these projects as publicly subsidized hotels or PSHs. As part of the background work for this study the investigators identified 118 hotels representing 53,852 rooms that have received public sector aid that ranges from 5 to 100 percent of the project cost.¹ The mean public subsidy is over 50% and 38 properties are fully funded by the public sector (see Figure 1 and Table 1). In addition, ongoing monitoring of news services identified another fifty-six communities (Table 2) that are considering or developing hotels that will use some type of public assistance over the next five years.

INSERT FIGURE 1, TABLE 1 AND TABLE 2 HERE

The use of public money to either develop in entirety or assist the development of a hotel raises many questions. This study focuses on one question that is increasingly getting attention and in some cases inspiring lawsuits (Milford and Montgomery, 2011; Mirabella, 2005 and Leagle.com, 2007); that is, how are neighboring hotels impacted when they have new publicly subsidized competition? There are two opposing camps that frequently square-off in such debates. One claims that the hotel is a needed “game changer” and that the market will benefit in two ways; first, the new hotel will be a price leader and will elevate prices (Average Daily Rate or ADR) for surrounding hotels and second, the new hotel will induce demand in a market and attract enough new business to create spillover effects that benefit surrounding hotels. The opposing camp claims two negative outcomes from the new hotel; first, public subsidies amount to unfair competition by lowering the cost structure of the new hotel and second, the entrance of a large publicly supported hotel will hurt neighboring hotels because the existing supply of hotel rooms will be diluted with its entry. An article from a recent issue of *Convention and Conference Facilities* (May 30, 2013, pp 8-9) encapsulates the debate well:

SOME HOTELIERS SKEPTICAL ABOUT MCCORMICK PLAN PLANS

Chicago, Ill. — The theory behind the city’s push to build 1,700 hotel rooms next to McCormick Place is simple: More beds next to the convention center will attract more trade shows, expanding the pie for everyone in the hotel business. Crain’s Chicago Business says David Friedman isn’t buying it. Friedman, who owns seven Chicago-area hotels, fears the increase in supply will depress room rates and profits at existing hotels. And he grumbles that 1,200 of the rooms would be built by the Metropolitan Pier and Exposition Authority, the quasi-government body that runs McCormick Place. “It’s not fair when it’s coming from McCormick Place,” says Friedman, president of Skokie-based F&F Realty Ltd., whose hotels include a West Loop Crowne Plaza and a Doubletree in Arlington Heights. “That’s not the private sector, in my opinion.” Friedman’s views illustrate the anxiety that many local hoteliers feel about the convention authority’s strategy, part of a broader \$841 million revitalization plan unveiled this month that includes a new basketball arena for DePaul University next to the convention center. While hotel owners welcome more people visiting Chicago, they like new development about as much as a Legionnaires’ outbreak. “Anytime there’s more supply, it’s going to have an impact,” says Jerome Cataldo, president and CEO of Hostmark Hospitality Group, a Schaumburg-based hotel investor and manager. “Clearly, there are going to be winners and losers.”

¹ The U.S. lodging industry has 4.875 million rooms in 51,200 properties according to the American Hotel & Lodging Association 2012 Lodging Industry Profile.

This study provides new information about the practice of using public subsidies to encourage hotel development in the United States. It then presents eight case studies and conducts impact analyzes to determine how each of these publicly owned or subsidized hotels influenced the performance of a set of competitive hotels in each of their respective markets. It goes on to summarize the findings and discusses trends in order to provide a basis for more informed decision making regarding these public sector investments.

1-2 What Types of Public Assistance are Being Offered?

As can be seen in the data presented in Figure 1, Table 1 and Table 2, the use of public money to encourage hotel development is widespread in the United States. Public participation in these projects can take two forms. The first is outright public ownership where a not-for-profit corporation or other agency of the sponsoring government holds the title of the hotel and is responsible for engaging the hotel developer and operator (Hazinski, 2004). The second is some type of public private partnership (PPP) where the hotel is owned privately, but the project is subsidized by low cost government financing or other incentives. These subsidies can take many forms that are detailed by Nelson, Baltin and Feighner (2012). Among them are:

- Tax rebates and deferrals including payments in lieu of taxes (PILOTs)
- Waiving development impact fees and/or building permits
- Lowering development costs by subsidizing one or more aspects of the project, particularly related infrastructure needed to support the hotel such as roads, parking, and utility extensions.
- Low cost leases or sales of public land
- Assisting the project with public debt instruments which might include tax increment financing (TIFs)
- Direct subsidies through development grants.

1.3 Why Use Public Resources to Subsidize Hotel Development?

Given the strained nature of most state and municipal budgets it is logical to ask why communities choose to subsidize an industry that has traditionally been the domain of private sector capital. The most commonly stated reason for these subsidies is that communities look at them as investments for which they will get strong returns because there are many benefits from tourism that are captured by the host community rather than the hotel developer. Among these are multiple tax revenues, job creation, improved performance of a convention center, potential for revitalization of the urban core and an amenity that enhances the community.

Tourism is a labor intensive and highly taxed industry so the benefits of attracting more visitors can substantially enrich government coffers. In addition to generating sales tax revenue for the community, hotels are subject to transient occupancy taxes (TOT). TOT rates of 15% or more are common in the United State. The latest TOT tax report conducted by STR Analytics (2012, pp. 4-5) for the American Hotel & Lodging Association shows Overland Park, Kansas with the highest combined TOT of 17.65% and forty-seven other cities with TOT rates of 15% or more.

A large hotel is a real estate intensive investment that generates significant property taxes both for the hotel and surrounding properties that tend to become more valuable if a large convention hotel is able to attract more visitors. A case in point is the Hilton San Diego Bayfront which was built on city owned land for which the local government collected no property tax prior to 2006. Property tax records indicate that once the hotel was fully operational the situation went from no property tax to \$5,866,761 collected for that same site in 2010 (Real Capital Analytics online data base, 2013). While \$5.8 million increments in annual property tax revenue are rare, this case illustrates just how big the stakes can be.

Other tariffs on tourists that enrich state and municipal governments include airport landing fees, and taxes on taxis and rental cars. Tourist spending habits also tend to be high on heavily taxed liquor and fuel. Sales tax revenues increase with the additional spending power that tourists bring to the region. The jobs created both to build and operate the hotel also drive the local economy and tax revenues. Many communities have also added highly taxed casino gaming in tourist zones as a way to further enrich public coffers.

Given the potential revenue streams that a major hotel can create or expand for a community, it is not surprising that so many municipalities are being entrepreneurial when it comes to supporting these projects. Of course, public subsidies of businesses that are traditionally thought of as the purview of private sector capital raise many issues including what is the appropriate role for government; what happens when a municipally owned project does not perform as expected and equity issues that occur when privately funded hotels have to compete with subsidized properties.

This study seeks to make a contribution to the latter of these issues by providing new information about how the existing hotels surrounding a new hotel are affected when PSHs open in their market. Do these projects induce new demand that spills over and helps raise the fortunes of all, do they cannibalize the market with publicly subsidized competition or are there other reactions? It also looks at the characteristics of the market for each of the cases in an attempt to identify trends that indicate how the addition of a PSH might affect similar markets. This is a salient policy question that is being raised in many communities. We could provide dozens of similar quotes from across the country, but this one from Minneapolis / St. Paul regarding a proposed subsidy for a hotel to support their convention center is typical:

Opponents, however, say that a 1,000-room hotel would be a bad use of public money and would hurt existing hotels by flooding the market with additional rooms and creating unfair competition (Vomhof, 2013).

In spite of the importance of how such a property might affect other hotels in the market, there is little in the academic literature to guide policy makers on this issue. These impact analyses begin to address this gap.

2.1 Literature Review

Blocher (2006. p. 139) notes that “(d)espite the massive public investment in hotel projects, surprisingly little scholarly literature addresses the wisdom of this public support.” This research is an example of an event study which looks at the hotel performance metrics of occupancy percentage, average daily rate (ADR) and revenue per available room (RevPAR)

prior to and in the months following an “event”. In this case the event is the opening of a subsidized hotel. To the knowledge of the investigators this technique has not previously been used to look at the impact of a subsidized hotel entering the market, but it has been used to look at the impact of other events. Enz, Kosova and Lomanno (2011) used a similar technique to examine the impact of the 911 terrorist attacks and the 2008 economic shock on the above mentioned hotel metrics for the entire U.S. market. Hazinski (2010) proposes using regression models to look at the impacts that the opening of a convention center has on the metrics of the local hotel market.

Among those who have addressed other aspects of the wisdom of public support for hotels is Sanders (1999, 2004a, 2004b) who attacks the use of public funding for hotels, criticizing the practice as not being equitable and provides evidence of publicly supported hotels that did not live up to their expected financial returns. Among the underperforming properties Sanders cites are the Renaissance St. Louis Grand Hotel & Suites, a Radisson hotel in Myrtle Beach that has since changed its affiliation to Sheraton in an attempt to improve its performance and the Sheraton Overland Park in Kansas. Murphy (2005) provides a critical review of feasibility studies done on PSHs claiming that they are frequently overly optimistic about expected performance. Nelson (2006) proposes processes to review feasibility studies for PSHs and describes political barriers that make such analyzes rare.

Clark’s (2007) Delphi study found that a headquarters hotel is an amenity necessary for a convention center to meet its potential. He goes on to note that the subsidies necessary to bring such a hotel to the market are an additional cost that many communities do not consider when they build a convention center. Detlefsen (2012) suggests that open bidding processes should be employed to minimize the public subsidies necessary to bring convention hotels to market. Gee and Singh provide some non-quantitative guidelines governments can use when considering subsidies to encourage hotel development. In these guidelines Gee and Singh (2008, p. 142) note that “in most instances, government officials have limited knowledge of the relative costs and benefits of using investment incentives.”

3.1 Methodology

This study began by compiling information on PSHs in the United States with the goal of assembling the most complete database on these projects. Hazinski (2004) published a list of seventeen publicly financed hotels and mentioned another five PPP projects that involved partial public financing. He also identified another twenty-nine cities that were considering municipal support for various hotel projects. While Hazinski had not published an update to this list, his firm, HVS, had been informally updating it over time. While acknowledging that the list was incomplete, HVS was willing to share what they had with the authors. In a parallel effort, the authors had started their own data base of hotel PPPs. These lists were combined and then further augmented and added to using both published and unpublished records. In addition to HVS, the authors obtained data from executives at Encore Garfield Public/Private, LLC, PKF Hospitality Consulting, Marriott Hotels and Resorts, Hilton Hotels Corporation and Hyatt Corporation. Data from these sources were combined and cross checked to provide the summary data presented in Figure 1 and Tables 1 and 2.

Eight case studies were then selected from this data for the events study. These eight were chosen to insure the sample was diverse in terms of geography, brands and market size. These properties are listed in Table 3.

INSERT TABLE 3 ABOUT HERE

This analysis explores how the performance of competing hotels was impacted by the opening of a PSH. The markets for each of the subject properties were examined and competitive sets identified that consisted of those hotels that most directly compete with the subject property. As a technical matter, STR Global requires that a competitive set of hotels consist of four or more properties to make it impossible to determine the metrics of any one hotel.

The performance metrics for a competitive set of hotels for each project were obtained from STR Global that contains data for two years prior to opening of the new PSH in the market and four years after the opening of the PSH, provided the property had been open for four years. The metrics obtained include the occupancy percentage, ADR and RevPAR for the competitive set. These figures are all in nominal dollars. In order to provide a complete understanding of the data, each market's data was examined at every step as it was progressively filtered for inflation and then the state of the economy. ADR and RevPAR were first plotted in nominal and then constant dollars. Constant dollars were set using a CPI index for all urban consumers obtained from the United States Bureau of Labor Statistics² which put ADR and RevPAR in terms of March 2013 dollar values to account for inflation. The nominal RevPAR data were then indexed to the same metrics for the entire U.S. market to better identify whether trends were the result of the new PSH entering the local market or the result of larger trends in the economy. For example, an indexed RevPAR of 0.20 means that the competitive set is 20% better than the US market, while an indexed RevPAR of -0.25 means that the competitive set is 25% worse than the US market.

Finally, a general linear model (GLM) approach was used to analyze the indexed RevPAR trends and variability before and after the introduction of the PSH in in each market. While it is helpful to look at the interaction of ADR and occupancy as they generate RevPAR, when examining the graphical data, the RevPAR metric combines both to provide an indication of the overall market. Consequently, indexed RevPAR is looked at alone in the GLM. The model used was:

$$\text{IndexedRevPAR} = \beta_0 + \beta_1(\text{Month}) + \beta_2(\text{Change}) + \text{Error} \quad (1)$$

where "Month" was a series of eleven binary variables and Change was equal to 0 before the event and 1 after the event. Once this GLM was run, the residuals were stored. Least squares means were used to get point estimates for the monthly-adjusted means before and after the event. A Bonferoni confidence interval was used to get a 90% confidence interval for the effect of the change on the mean. A Main Effects Plot was used to graphically depict this change. Later, a Leven's test was used to see if the variances of the error terms had changed when the event occurred. Data used were two full years before and four full years after the opening of the

² www.bls.gov We used series CUUR0000SA0, Monthly CPI of All Urban Consumer, 1982-84 = 100

PSH. The data for the month that the hotel opened was not used. The Minitab output from the analysis of each market can be found in the appendices.

4.1 Data Analysis

To get an overall sense of the trends, the monthly operating metrics for the competitive sets of hotels in each market were plotted first in nominal dollars, then in constant dollars and finally as indexed to the entire U.S. hotel market prior to the general linear modeling analyzes. Each of these steps is shown graphically and described in the first case of the Hilton Baltimore to document the process. In the interest of space, latter cases are described without including the graphs for every step, but they are described within the text and summarized in Table 4.

4.2.1 Description of Analysis Using the Hilton Baltimore's Competitive Set as an Example

Figure 2 plots monthly ADR, RevPAR and occupancy of the subject hotel's competitive set for two years prior to opening and four years post opening. ADR and RevPAR are not adjusted for inflation, while occupancy is that percentage of the available room nights in the competitive set that were sold each month. The date that the subject property opened is indicated by a vertical line. This view provides the most unfiltered look at the data. As such, it should be interpreted with caution as it does not adjust ADR and RevPAR over time for inflation or account for fluctuations in the U.S. hotel market as a whole.

INSERT FIGURE 2 HERE

Figure 3 plots the same data in "constant" dollars. The result of this filtering can be seen in the data for the Hilton Baltimore's competitive set. In nominal terms, the metrics of the competitive set appear to be very slightly or not at all impacted by the addition of the 757 room city owned Hilton into the market. This same data looks different in the constant dollars which adjusts ADR and RevPAR for the effects of inflation. In this view the competitive set's ADR and RevPar both show a downward trend since the August 2008 opening of the Baltimore Hilton, while occupancy (which, as a percentage, is not impacted by inflation) remains fairly constant with the continuing pattern of seasonal fluctuations.

INSERT FIGURE 3 HERE

Inflation and the addition of large subsidized hotel into the market is not the only thing impacting these figures. Travel is greatly influenced by the health of the economy. The Hilton Baltimore had the misfortune of opening in August of 2008 which coincided with the September 2008 Lehman Brothers bankruptcy that led to the near collapse of US financial markets. These events mark the beginning of one of the deepest and longest economic recessions of our time. It should not be surprising that ADR and RevPAR suffered in the Baltimore market at this time. One of the things we sought to answer is, are the declines in ADR and RevPAR a result of the new competition in the local market or are they the result of the economic recession?

In an attempt to answer this, the data from the Hilton Baltimore's competitive set was indexed to the performance of the entire United States' hotel market through the use of a data

base provided by STR of over fifty-thousand domestic hotels.³ This indexing adjusts for the impacts of the recession on individual hotel metrics and lets us look at changes in the competitive set relative to the entire United States hotel market. The results can be seen in Figure 4, entitled “Hilton Baltimore Competitive Set Data Indexed to Entire U.S.” This view shows that Baltimore, like many of our destinations, is a highly seasonal market. In the case of Baltimore, the spring and fall are strong with a noticeable dip in the months of July and August. It is also apparent that Baltimore’s Inner Harbor is not a popular destination in the winter months as all the metrics drop precipitously each year at this time. The numbers for ADR and RevPAR in this index consistently outperform the national average. Occupancy percentage also fares well compared to the national average except during the winter months when it drops below industry norms. These metrics are all normalized to zero, that is, any number above 0 indicates that the competitive set of hotels in Baltimore does better than the US as a whole, whereas, any number below 0 indicates that this set performs worse. As you can see, this set of hotels outperforms the US averages in all metrics, the only exception is occupancy, which dips below 0 for a few months, notably the month of December.

INSERT FIGURE 4 HERE

The impact of the August 2008 opening of the Baltimore Hilton is especially evident in Figure 4 where the competitive set’s metrics are indexed to those of the national market. In the peak seasons the additional room inventory does not seem to influence RevPAR. But, during the slow winter season RevPARs drop to unprecedented lows after the opening of the Hilton. This suggests that the Hilton helped attract enough new business to absorb the additional inventory at a good rate for the hotels during peak season, but the added inventory was a burden that dragged down the competitive set’s occupancies and rates during the winter months. This is a pattern that repeats itself in varying degrees in several of the markets looked at in this study.

These trends, which appear graphically, are confirmed by the GLM. Using month as a controlling variable the model finds that the mean indexed RevPAR for the competing properties in Baltimore after the opening of the Hilton Baltimore was reduced by an estimated .1387 (a reduction of mean Indexed RevPAR of an estimated 7.8 %). A 90% confidence interval for this reduction was (.06, .21), which implies that the reduction was statistically significant. The variance around the adjusted means was reduced by an estimated 6.9%, though this was not statistically significant ($p > .3$).

While the competitive set’s indexed RevPAR showed new highs and lows after the opening of the Hilton Baltimore, there was also a period of less volatility from March 2010 to October 2011 which accounts for the slight, but statistically insignificant, reduction in variance around the adjusted means. These can be seen in Figure 5 which charts the Hilton Baltimore’s competitive set’s indexed RevPAR and overlays it with the pre and post event means of the same.

INSERT FIGURE 5 HERE

³ The index is the ratio of the local market data to the national data. For example, in a month in which the Hilton Baltimore’s competitive sets occupancy is 66% and the national occupancy is 60%, the index is $0.66 / 0.60 = 1.10$; that is, the competitive set’s occupancy is 110% of the national occupancy.

4.2.2 Performance of the Lancaster Marriott at Penn Square's Competitive Set

The 300 room Lancaster Marriott at Penn Square and the attached Lancaster County Convention Center opened to much fanfare in June 2009. The graphs of nominal and constant dollar data collected from the hotel's competitive set show a cyclical market that consistently peaks in August and bottoms out in January. As can be seen graphically in Figure 6 the competitive set's RevPAR peaked at over \$111 in constant dollar terms in both August 2007 and 2008 prior to the Marriott and convention center opening and it never achieved that level again. The January prior to the opening, RevPAR bottomed out at \$40. January 2010, immediately following the opening, the competitive set's RevPAR was an even lower \$34. Based on these numbers one might conclude that the Marriott hotel cannibalized the market and took market share from competing hotels, but this would be a mistake without filtering for the effects of the recession.

When the competitive set's performance is indexed to that of the entire United States, we get a slightly different story. While the competitive set's nominal and current dollar RevPAR fell following the opening of the Marriott, during its peak season it fell less than that of the market as a whole. The competitive set's indexed August RevPAR exceeded that of the market and reached new higher peaks in each of the two years following the addition of the Marriott to the market. Conversely, performance in the trough month of January got progressively worse relative to the market in each of the three years after the opening of the Marriott and convention center. What we see after the opening of the Marriott and convention center are more extreme swings in seasonal performance at the competing hotels. It appears that the convention center and hotel are successfully attracting enough visitors in the peak summer months to help all the properties in the region. Unfortunately a remote tertiary market like Lancaster is a tough sell for meetings and conventions in the winter even with these new facilities. During the winter it appears that the additional inventory of the Marriott takes market share at the expense of neighboring hotels.

The results of the GLM analysis on the competitive set's indexed RevPARs shows that monthly-adjusted mean indexed RevPAR in these properties averaged .0699 before the event and .0844 afterwards, representing a statistically non-significant increase in mean indexed RevPAR of 1.4% ($p = .282$). Variance of indexed RevPAR decreased by 27.6%, yet this decrease was statistically non-significant ($p = .121$). In spite of larger swings post event there are a series of spring and fall sholders that can be seen in Figure 7 that impact the variance calculation resulting in the statistically non-significant decrease in the metric in spite of the wider range of indexed RevPAR post event.

INSERT FIGURES 6 & 7 ABOUT HERE

4.2.3 Performance of the Sheraton Phoenix Downtown's Competitive Set

While the pattern of the seasonality is very different in Downtown Phoenix than it is in Baltimore and Lancaster, the overall impact of a large convention hotel entering the market had strikingly similar impacts on the metrics of competing hotels. The Downtown Phoenix market consistently peaks in the month of February and bottoms out in August. There is also typically a smaller performance trough in December. Like in Lancaster, the nominal and constant dollar

metrics of hotel performance in Phoenix suffered upon the opening of a large PSH. In constant dollars RevPAR of the Sheraton Phoenix Downtown's competitive set peaked February 2008 at \$155 which is a number that it has not been able to achieve again since the opening of the hotel, however it should be noted that the Super Bowl was held in a suburb of Phoenix that month. Likewise the troughs of this same metric fell to new lows after the September 2008 opening of the Sheraton hotel (see Figure 8).

INSERT FIGURE 8 ABOUT HERE

As in the case of both the Lancaster Marriott and the Baltimore Hilton, the performance metrics of the downtown Phoenix hotels were adversely impacted by the recession. The effects of the recession make it particularly important to consider the indexed metrics to get a truer sense of the impact of the 1,000 room city owned Sheraton on other hotels in the market. There are strong parallels to the indexed metrics in Phoenix, Lancaster and Baltimore. In all these cases the nominal and constant dollar metrics of competing hotels suffered after large publicly subsidized competition entered their markets, but because of the recession the U.S. market overall was suffering. When the metrics of Phoenix are compared to the market as a whole we once again see a pattern where indexed RevPARs peak at higher levels during the high season and trough lower during the soft season. As in Baltimore and Lancaster the additional inventory of rooms causes wider swings in RevPAR. This suggests that the new hotel encouraged business that benefited all in peak season, but the additional rooms hurt competing hotels in the off season when a softer market could not absorb the larger inventory.

The GLM analysis shows that the mean indexed RevPAR for the competitors' properties in Phoenix after the opening of the publicly funded Sheraton Phoenix Downtown decreased by an estimated .0159 or 1.2 %. This change was found to be statistically non-significant ($p = .745$). The variance in indexed RevPAR around the adjusted means was increased after the event by an estimated 45.0%, and this increase was statistically non-significant ($p > .250$). Figure 9 provides a graphical representation of these trends.

INSERT FIGURE 9 ABOUT HERE

4.2.4 Performance of the Hyatt Regency McCormick Place's Competitive Set

The 800 room Hyatt Regency McCormick Place opened in June 1998 as a wholly publicly owned hotel under the auspices of Chicago's Metropolitan Pier and Exposition Authority. Although it opened a decade earlier than the previously described projects, we can see a similar pattern of wider swings in ADR and RevPAR among the hotel's competitive set after the new property comes online.

The nominal and constant dollar data show that the Chicago market follows fairly predictable seasonal cycles with peaks in June and September / October as can be seen in Figure 10. Low points are consistently seen in January. The one outlier is September 2011 during which Chicago was affected by the 9/11 terrorist attacks. The competitive hotels' occupancies do not seem to be effected one way or the other by the addition of the Hyatt Regency McCormick Place as they continued their seasonal fluctuations within the range of 90 to 49 percent. ADR and RevPAR metrics did see wider swings after the opening of the new hotel. These indices hit new

highs in the years following the Hyatt Regency's opening with monthly RevPAR breaking the \$229 mark in constant dollars three times in the year long period from October 1999 to September 2000. The two years prior to the Hyatt's opening, the same group of hotels' RevPAR topped out at only \$211.

While the competitive set saw new constant dollar RevPAR highs after the Hyatt Regency came on line, it also experienced new lows. Prior to the new hotel, constant dollar RevPAR hit a low of \$105 in January 1998. That same metric fell below \$100 in three of the next four years in the Januarys that followed the hotel's opening; providing yet another example of where the addition of a large publicly assisted convention hotel helps the market as a whole in periods of high demand, but hurts during slow periods. These trends can be seen graphically in Figure 10 and are also evident in Figure 11 where the RevPAR data is indexed to the entire U.S. market.

The GLM analysis indicates that the competitive set's mean indexed RevPAR increased .09058 or 3.9%. A 90% confidence interval for this increase was (.005266, .1759), which indicates a statistically significant change. The variance in indexed RevPAR around the adjusted means increased significantly after the event by an estimated 59.4%, and this increase was statistically significant ($p < .04$).

INSERT FIGURES 10 & 11 ABOUT HERE

4.2.5 Performance of the Overton Hotel and Conference Center's Competitive Set

The data from the competitive set of the Overton Hotel and Conference Center which opened in Lubbock, Texas in September 10, 2009 does not neatly follow the trends established in the previous four case studies. The nominal and constant dollar data do not show consistent seasonal trends like we found in the other markets. There are some irregular spikes in the fall that appear to depend on the timing and number of Texas Tech home football games and December tends to be slow, but none of these patterns are as regular and predictable as we found in the previous examples. Another thing that makes this market noticeably different from the previous examples is that both ADR and RevPAR are consistently below national averages. While occupancy fluctuates, it tends to do so at and around the national average (see Figure 12). These metrics for the competitive set of hotels in our previous examples of Baltimore, Lancaster, Phoenix and Chicago on the other hand tended to be slightly to well above the national averages. These numbers reflect the composition of the hotel inventory in Lubbock which was made up of select and limited service hotels. The desire of the city officials to add a full service conference hotel to a community that lacked one was a primary driver of public support for this project.

From the nominal data it is hard to see that the opening of the Overton Hotel and Conference Center had any impact, either positive or negative, on its competing hotels. When the data is converted to constant dollars (Figure 12) there seems to be a slight negative trend, but the data is irregular and PSH hotel opening occurred in the middle of the recession, so it is difficult to draw definitive conclusions from this graph. The data comes into better focus when it is indexed to the national market, as shown in Figure 13. This shows irregular metrics with ADR and RevPARs that perform below the national market. This is consistent with a market dominated by select service properties. In this view it is clear that the opening of Overton Hotel

and Conference was not a boon to competing hotels. In fact there is some erosion of RevPAR in the local market compared to what happened nationally.

These findings are reflected in the GLM analysis which shows a non-statistically significant decrease in the competitive set's mean indexed RevPAR of 2.3% ($p = .251$). On the other hand, there was a statistically significant decrease in the variance of indexed RevPAR ($p < .02$). These metrics suggest that the opening of the Overton Hotel and Conference Center hurt the competitive set's RevPAR, but the market became a bit less volatile (see Figure 13).

INSERT FIGURES 12 & 13 ABOUT HERE

4.2.6 Performance of the Sheraton Grand Sacramento's Competitive Set

The nominal and constant dollar data suggest that the opening of the 500 room Sheraton Grand Sacramento hurt the limited number of hotels that existed in the Capitol District at that time. Prior to the opening, the metrics for the competitive set of hotels consistently performed above industry norms. As illustrated in Figure 14, in the year prior to the Sheraton Grand's entrance into the market, the competitive set's RevPAR twice peaked (June 2000 and March 2001) at \$130 in constant terms. Additional constant dollar RevPAR highs of \$127 and \$129 were achieved the previous year in June 1999 and March 2000 respectively. In the years after the opening the highest RevPAR peaks topped out at a mere \$113 and \$112 constant dollars. The December prior to opening the competitive set's RevPAR troughed at \$76 constant dollars. In the years following the annual RevPAR lows, which occurred every December, were \$65, \$61, \$56 and \$63 beginning in 2001 through 2004.

These figures are even more extreme when they are indexed to the entire U.S. market where all the metrics for the competitive set declined following the opening of the Sheraton Grand from which they did not recover in the four years following. The GLM results in Figure 15 confirms what we see in Figure 14. The competitive set's index adjusted monthly mean RevPAR decreased by .1378 or 9.0% after the opening of the Sheraton Grand. This decrease is statistically significant ($p < .00005$). The market also became much more volatile as evidenced by the variance in indexed RevPAR around the adjusted means which increased by 49.3%. This increase in variance is also statistically significant ($p < .04$). While the city owned Sheraton Grand Sacramento may have succeeded in that it provided additional jobs and tax revenues, by all measures the hotel appears to have cannibalized market share from existing hotels in the Capitol District.

INSERT FIGURES 14 & 15 ABOUT HERE

4.2.7 Performance of the Hilton San Diego Bayfront's Competitive Set

The 1,190 room Hilton San Diego Bayfront opened December 3, 2008 as financial markets were falling and the country entered its most recent recession. The nominal and constant dollar metrics of competing hotels reflect this. Demand, which is heavily dependent on the San Diego Convention Center, does not show a regular seasonality although December is consistently a slow month. The competitive set's ADR peaked at \$198 in constant dollars in

April 2008 prior to the Hilton San Diego Bayfront's entrance in to the market and has not risen above \$179 since. These trends are illustrated graphically in Figure 16

When the competitive set's metrics are indexed to the entire U.S. market (Figure 17) we see that collectively these properties consistently outperform the market in all categories and that these numbers continue to fluctuate within a fairly consistent range, both before and prior to the opening of the Hilton, with the trend appearing to be slightly lower. The GLM analysis reflects this with a statistically significant ($p = .0001$) decrease in mean indexed RevPAR of 13.2%. The variance in that same metric increased by 6.4% after the event, although this increase was not statistically significant ($p > .29$).

INSERT FIGURE 16 &17 ABOUT HERE

4.2.8 Performance of the L.A. LIVE J.W. Marriott / Ritz-Carlton Complex's Competitive Set

Those seeking public assistance for a hotel frequently claim that their project will be a "game changer" and "rate leader" that will attract new business and drive rates for all the hotels in the market, but it is hard to make a strong case that this happened in any of the previously described scenarios. The Lancaster Marriott at Penn Square was close to achieving this showing a modest, but statistically insignificant, increase in RevPAR. Chicago's Hyatt Regency McCormick Place also seemed to benefit the market as the hotel's competitive saw a slight rise in RevPAR that was statistically significant, but did so at the expense of more market volatility. The L.A. LIVE J.W. Marriott / Ritz-Carlton Complex presents the strongest case for being a "game changer" that lifted the metrics of other hotels in the competitive set.

Trends in both nominal and constant dollars rise nicely for the competitive set after the opening of the L.A. LIVE J.W. Marriott / Ritz-Carlton Complex. As shown graphically in Figure 18, the year prior to opening the competitive set's RevPAR spiked once at a high of \$144 constant dollars. After the opening the competitive set's RevPAR broke this mark and peaked at \$149 in June 2012. It is important to interpret these encouraging results within the context of the U.S. market as a whole. This complex opened in February 2010. Since then the U.S. lodging industry has been emerging from the recession. This begs the question, are the competitive set's rising metrics the result of the overall recovery of the U.S. lodging market, or did the addition of the L.A. LIVE J.W. Marriott / Ritz-Carlton Complex drive improvements beyond those of the broader national market? The answer clearly seems to be the latter. After the opening of the L.A. LIVE J.W. Marriott / Ritz-Carlton Complex the performance of competing hotels compares very favorably when indexed to that of the larger U.S. market. As can be seen in Figure 19, the competitive set's RevPAR index reaches new highs and the RevPAR troughs during slow periods are not as severe as they were prior to the opening. The GLM analysis shows a statistically significant ($p = .078$) rise in RevPAR of 5.5% and a decrease in market volatility as measured by variation around predicted means, however the change in volatility is not statistically significant ($p = .240$). The L.A. LIVE J.W. Marriott / Ritz-Carlton Complex seems to have grown the market at higher room rates, thereby helping the performance of competing hotels.

INSERT FIGURE 18 & 19 ABOUT HERE

4.3 Summary of the Eight Case Studies

This study presents eight different cases, each of which contains multiple data points. Table 4 and Figure 20 attempt to pull this data together in a useful manner. Assembling the data for all eight cases in these charts makes it easier to examine it for patterns. Examples of patterns that one might expect to see include:

- PSHs attract new business and grow the market to the benefit of existing hotels.
- PSHs do not significantly grow the market and take market share from existing hotels.
- The impact of a PSH on competing hotels is influenced by the number of rooms in the PSH.
- The impact of a PSH on competing hotels is influenced by the size of the existing market.

While scenarios such as these have intuitive appeal, none of them is evident in our data. There are no clear patterns that emerge from Table 4. There are three cases where RevPAR of competing hotels trends higher after the opening of a PSH, and five cases where this metric declines. Two of the markets where indexed RevPAR improved were in cities where large PSHs of 800 or more rooms were introduced and the other was a smaller 300 room property. Two of the markets that improved (Chicago and Los Angeles) are large gateway cities, while the third (Lancaster) is tertiary market. There is also no consistency as to whether the rise in RevPAR was due to rising occupancy percentages or room rates.

INSERT FIGURE 20 & TABLE 4 ABOUT HERE

Figure 20 plots the pre and post change in the means of the indexed RevPARs for each competitive set against the change in the pre and post standard deviations of their indexed RevPARs. This gives us four quadrants that we have labeled accordingly:

- “Game Changers” where the market got stronger and less volatile after the introduction of a PSH.
- “Swinging for the Fences” where the market got stronger, but more volatile after the introduction of a PSH.
- “Strikeout looking” where the market got weaker, but less volatile after the introduction of a PSH.
- “Strikeout Swinging” where the market got both weaker and more volatile after the introduction of a PSH.

Here again there are patterns that one might intuitively expect to see, but none materialized. For example, one might think that the markets would tend to cluster in either the “game changer” or “strikeout swinging” categories. In other words, there would be some kind of correlation between market strength and stability. This pattern did not materialize as every quadrant had at least one example fall into its category and no quadrant had more than three examples. While it would have been nice to see clear patterns that could be used to predict whether a PSH is likely to help or hurt existing hotels in a given market, no such patterns emerged from this study.

One pattern that can be seen in some, but not all, markets is that the RevPAR plots showed bigger spreads between seasonal highs and lows once a PSH was introduced. This suggests that the addition of the PSH helped attract enough visitors during peak season to absorb the additional inventory and created spillover business that benefited other hotels, but this was not the case during the soft season where the added inventory drove down occupancies and rates. In every case where this occurred, the market could be characterized as highly seasonal with predictable times where the destination had very high demand and others where demand could be expected to be very low. These trends were evident in both the cold northern markets of Lancaster and Baltimore, and in the hot Phoenix market.

5.1 Conclusions

There are two opposing sides that frequently square-off in the debate over the use of public money to encourage hotel development. One tends to boldly proclaim that the hotel they are championing will be a “game changer” that will drive up rates, attract new demand, and raise the profits of existing properties. The other side raises concerns about the fairness of publicly subsidized competition that will take market share from competing properties whose owners invested in the community in good faith.

While the sample size is limited, this study provides a first look at under what circumstances each of these scenarios is likely to occur. The “game changer” category is to what all PSHs seem to aspire, but it seems to be an elusive phenomena. Only the L.A. LIVE J.W. Marriott / Ritz-Carlton Complex fell into that category with a statistically significant increase in mean indexed RevPAR. The Lancaster Marriott at Penn Square also makes the cut in our plot, but neither the increase in mean indexed RevPAR or the decrease in market volatility were statistically significant. Chicago’s Hyatt Regency McCormick Place produced a significantly significant increase in its competitive set’s mean indexed RevPAR, but at the expense of more volatility. The remaining five markets saw varying degrees of erosion in their mean indexed RevPARs.

In three of our cases, larger seasonal swings were evident as these convention properties tend to attract enough new business during peak seasons to have spillover effects that benefit surrounding hotels, but during low season the additional inventory tends to drive metrics of competing hotels to new lows. It does not matter how nice your accommodations, few people long to be in Phoenix, Arizona in August or Lancaster, Pennsylvania in January. The market that fared the worst was Sacramento after the addition of the 100% publicly owned 500 room Sheraton Grand. This suggests that in small markets where there are not many rooms, the addition of even a modestly sized hotel can erode the performance of competing hotels. Otherwise, perhaps the most striking patterns was the lack of patterns that would suggest what kind of market is most likely to benefit or suffer from the introduction of a PSH. While two of the biggest gainers in mean indexed RevPAR were the large gateway markets of Los Angeles and Chicago, a third market that saw gains, albeit more modest ones, was the tertiary market of Lancaster, Pennsylvania. Those markets whose mean indexed RevPARs suffered the most also ran the gamut from the fairly large convention destination of San Diego to the more modestly sized market of Sacramento, with the midsized Baltimore thrown in for good measure. The other thing that is striking is the geographic diversity of these markets. There is nothing in our sample

that suggests that climate, size of the PSH or size of the market can be used to predict how a PSH will impact existing hotels.

5.2 Limitations and Opportunities for Future Research

This study provides an important exploratory study of how hotel markets are impacted when a PSH is added to the mix. The need for information is great given the widespread and growing use of public money to encourage hotel development. This study provides eight diverse cases, which is a small sample of the known universe of these transactions. Our understanding of how markets are impacted by the introduction of subsidized hotels could be improved with additional impact studies.

Furthermore, this study looks at just one dimension of a complex public policy issue. There are many aspects of these transactions waiting to be scientifically investigated. Among the issues that could benefit from additional research are:

- What is the return-on-investment that communities get from these projects?
- What kinds of public sector investments work best and which should be avoided?
- Is real estate speculation in the form of hotel development an appropriate role for government?
- What are equity issues to be considered when some development is subsidized and others not?
- What are the best practices in terms of...
 - o The use of subsidies?
 - o Oversight and decision making processes for these investments?

These questions and more provide a fertile and largely untitled field for researchers in disciplines as varied as economics, law, tourism development, political science, marketing, finance, real estate and public policy. This study makes a contribution toward a better understanding of one aspect of PSH and hopes to pave the way for additional work in this area.

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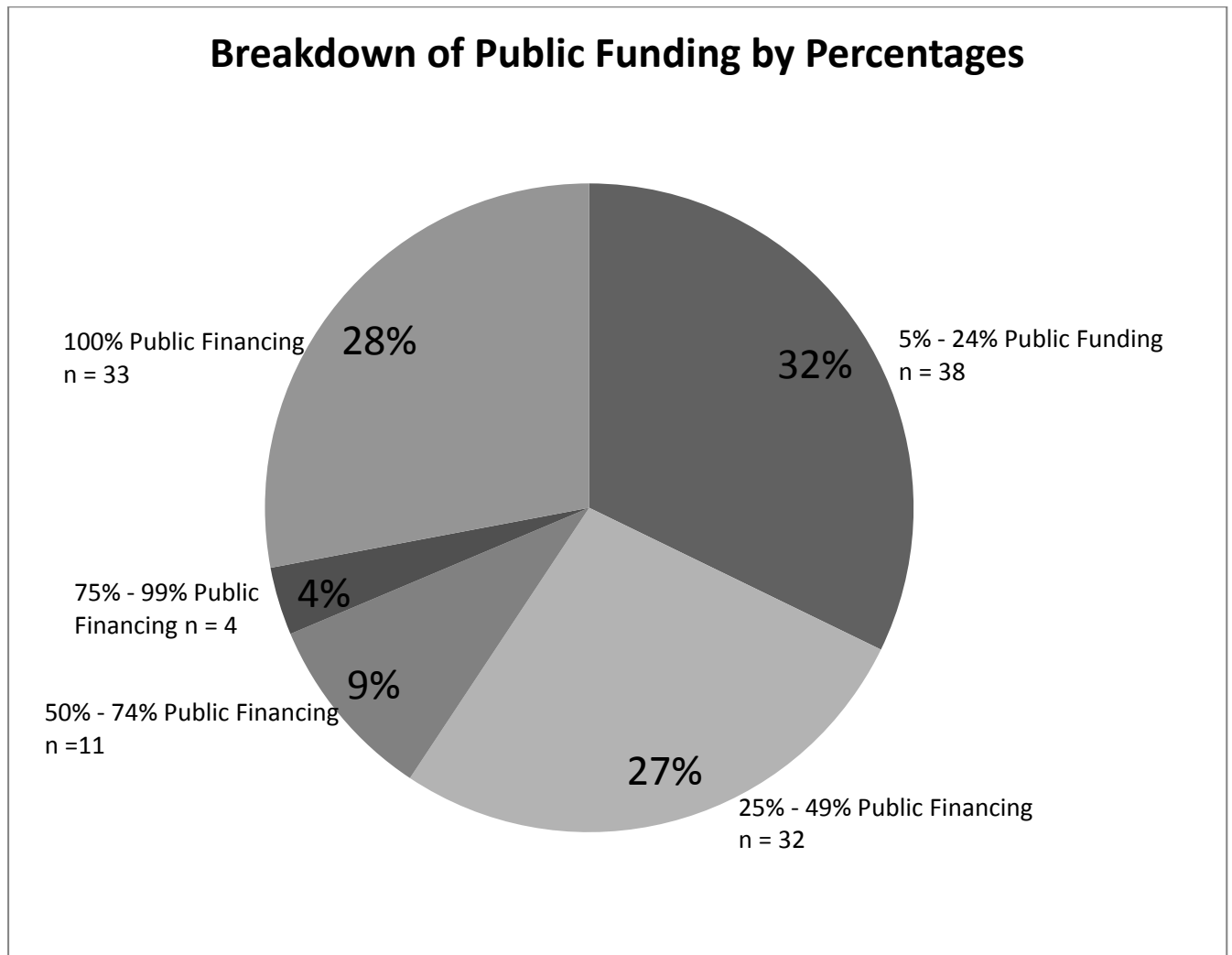
Tables and Figures**Figure 1 – A Breakdown of Public Funding for Hotels in the United States by Percentage of the Project that was Supported by Public Dollars**

Figure 2 – Hilton Baltimore Competitive Set in Nominal Dollars

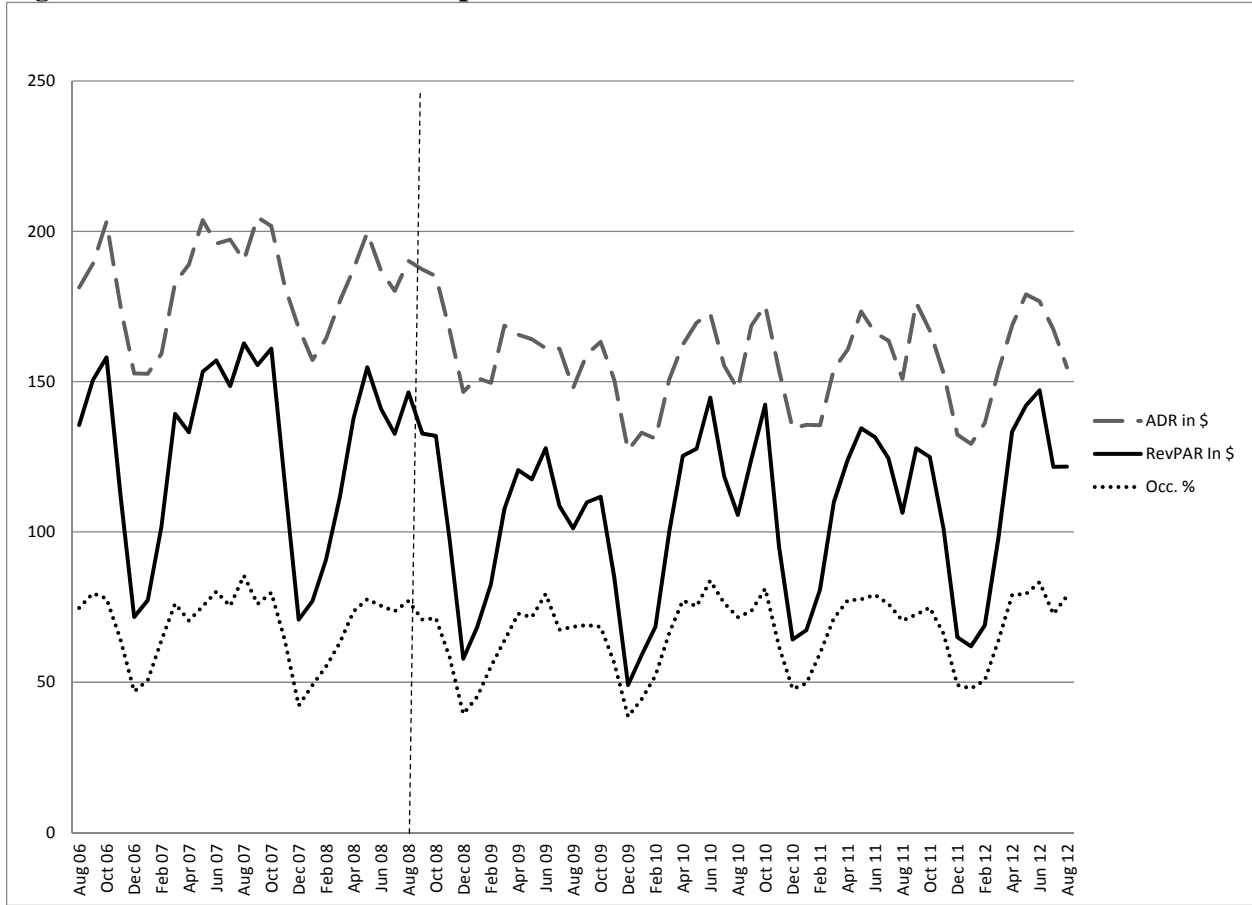


Figure 3 – Hilton Baltimore Competitive Set in Constant Dollars

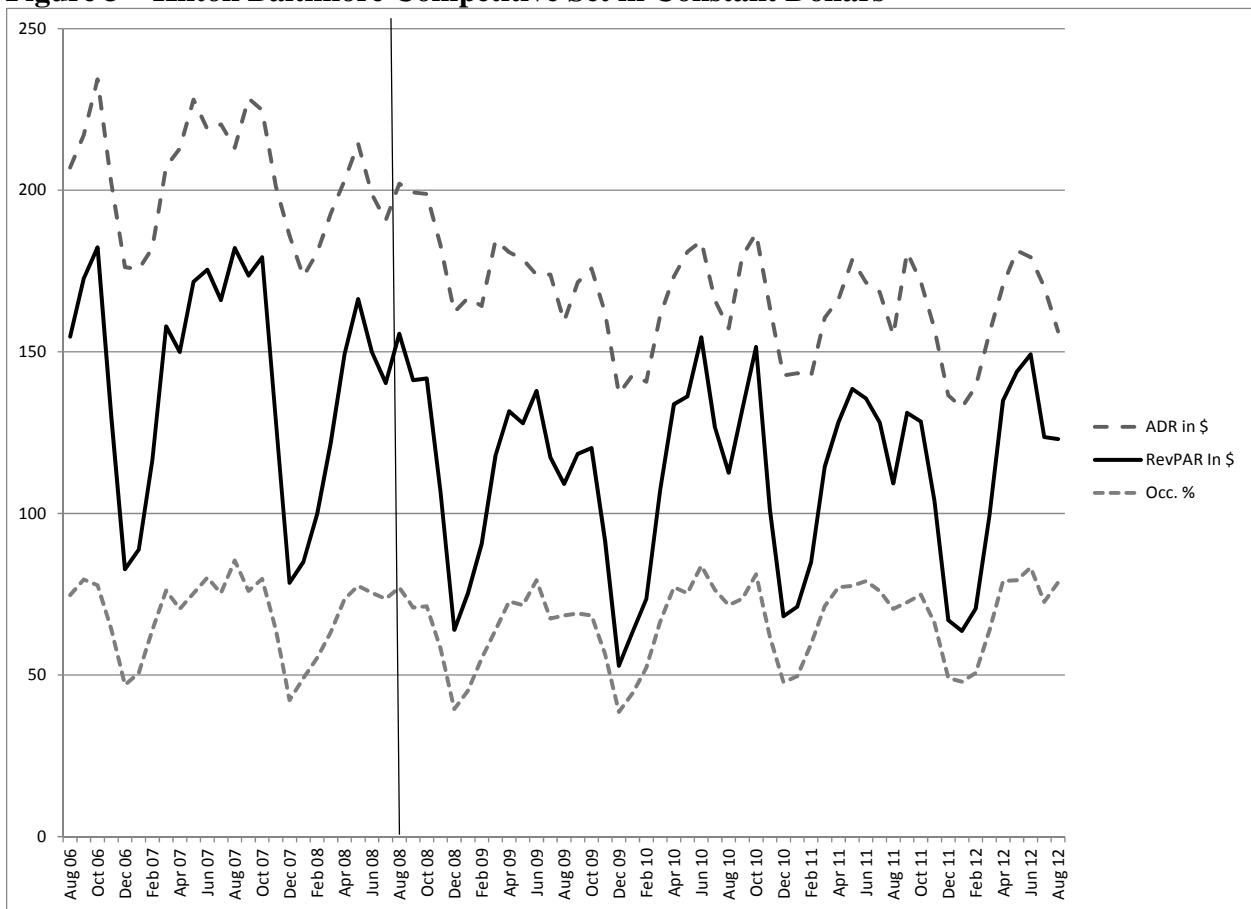


Figure 4 – Hilton Baltimore Competitive Set Indexed to the Entire U.S. Market

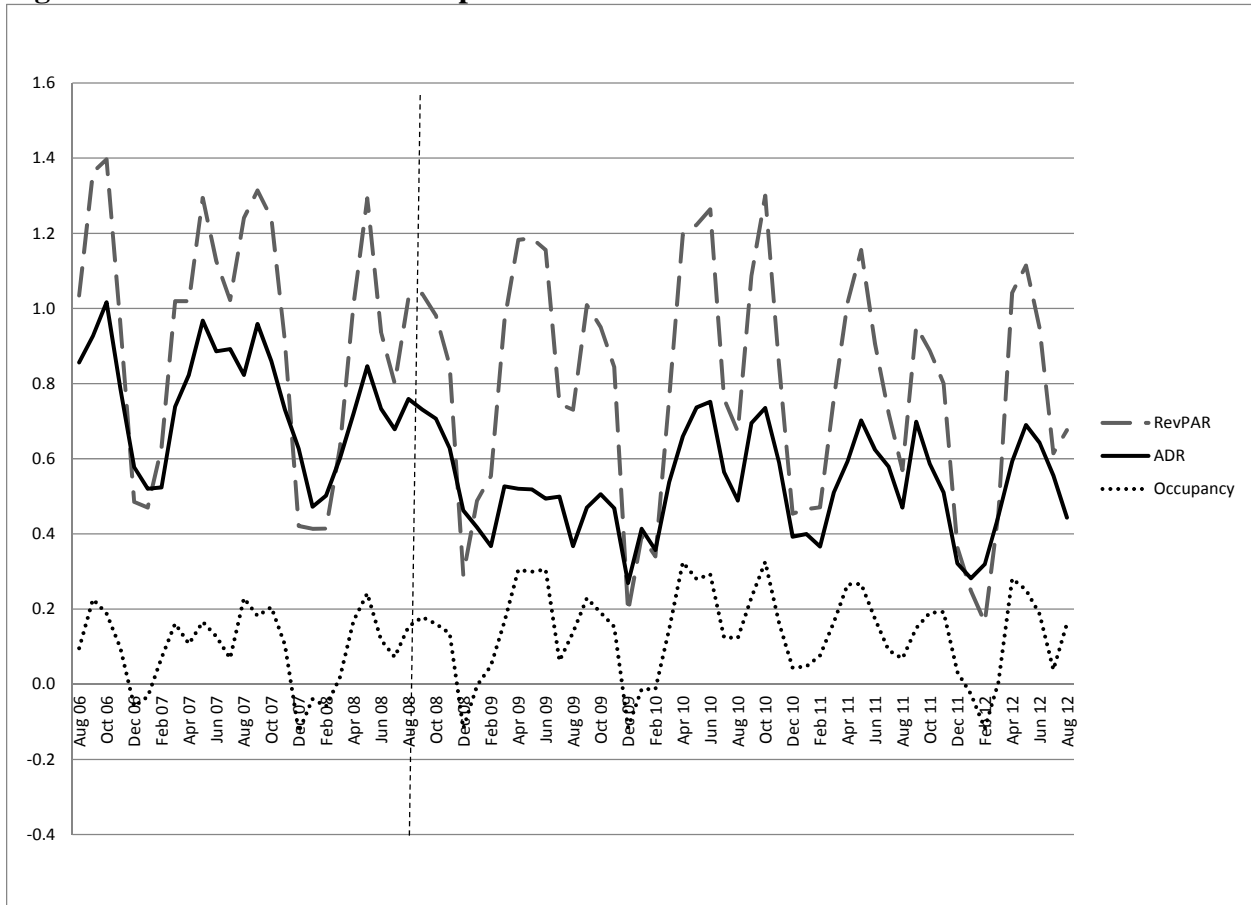


Figure 5 – Hilton Baltimore Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

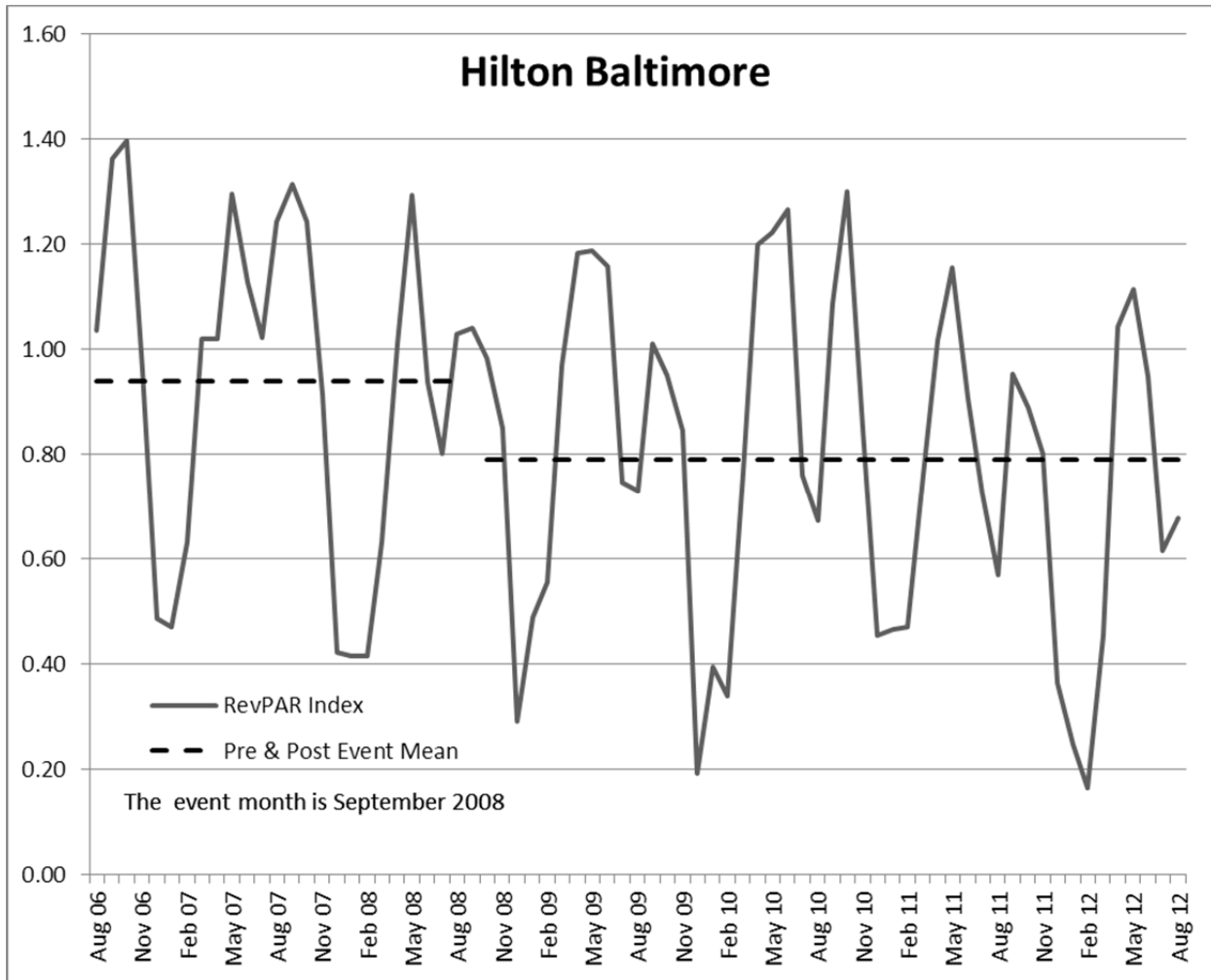


Figure 6 – Lancaster Marriott at Penn Square Competitive Set in Constant Dollars

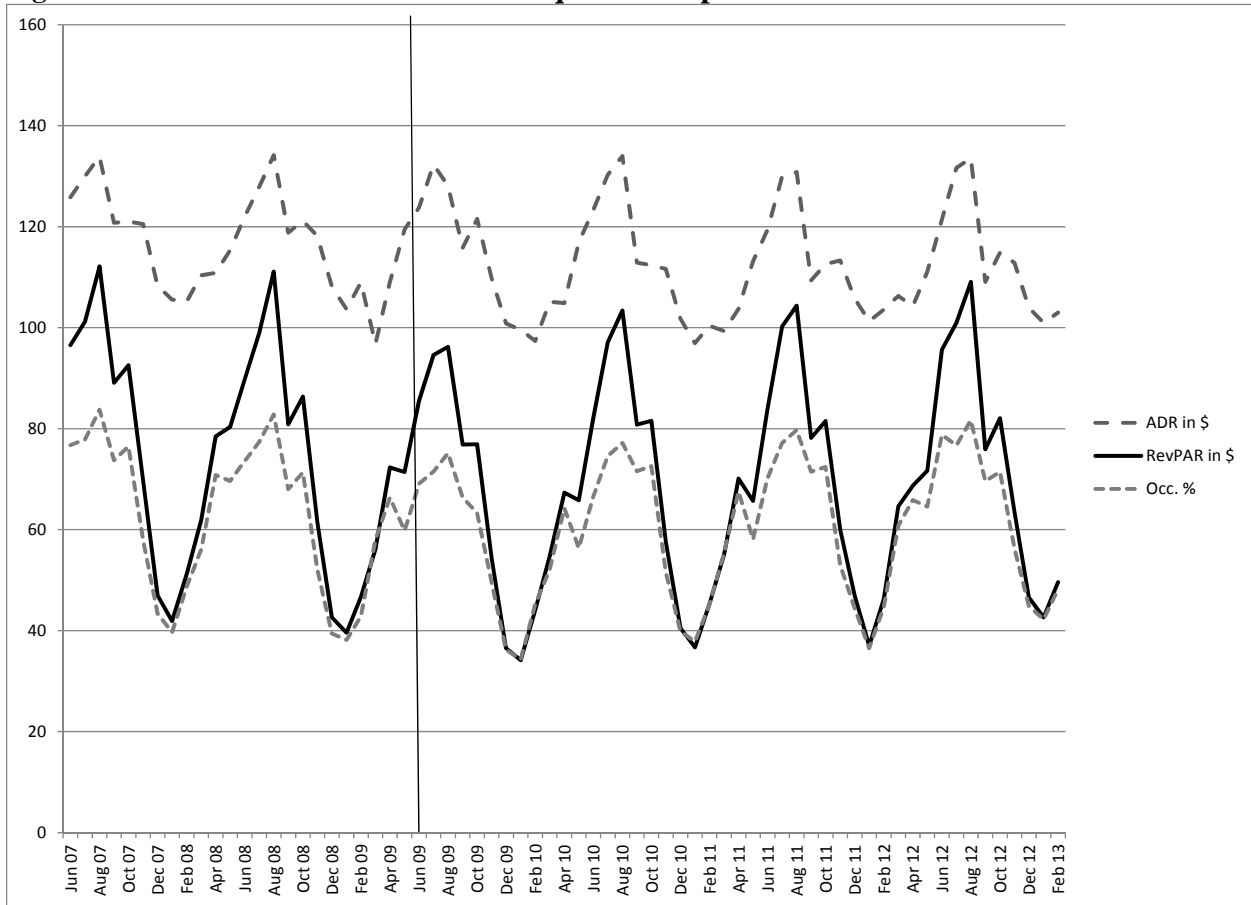


Figure 7 – Lancaster Marriott at Penn Square Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

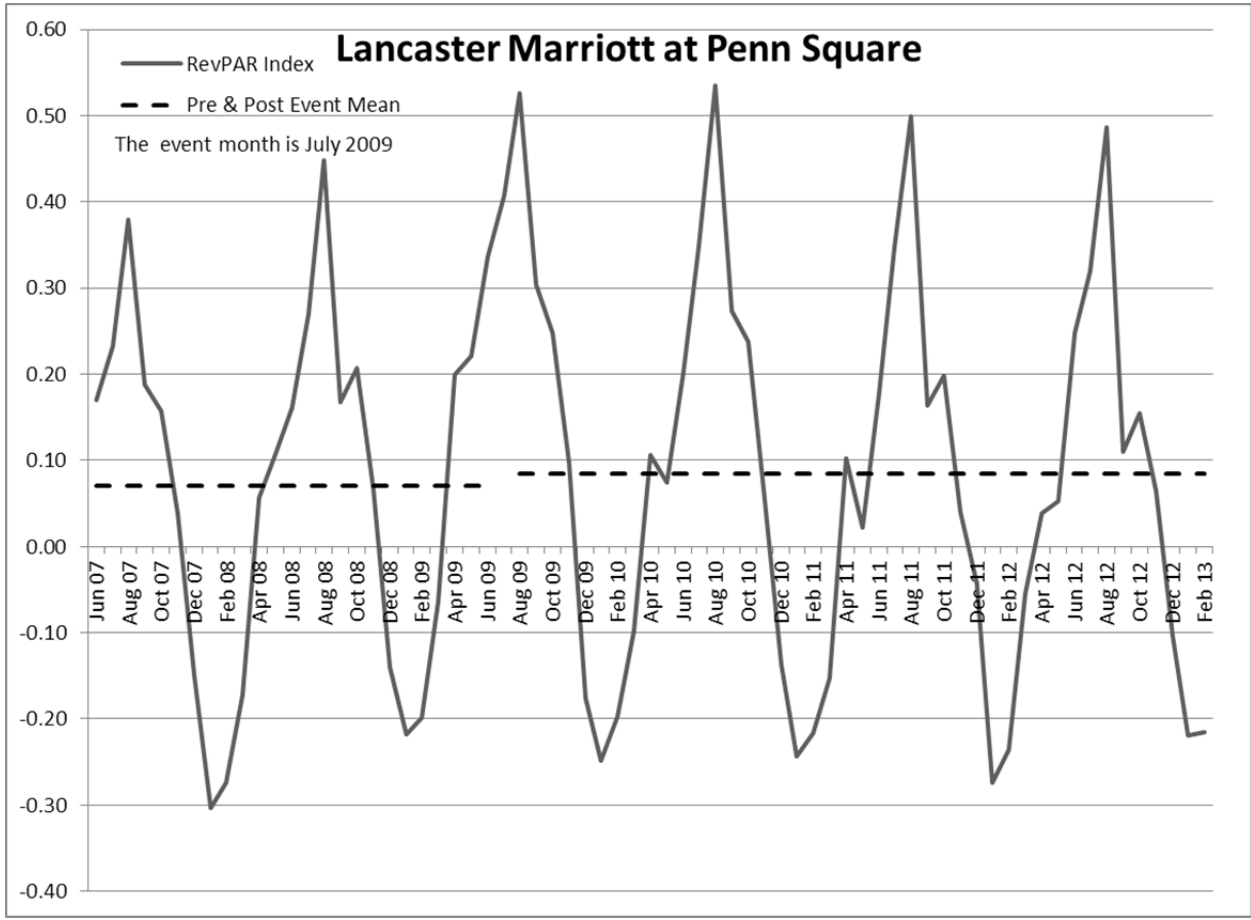


Figure 8 – Sheraton Phoenix Downtown Competitive Set in Constant Dollars

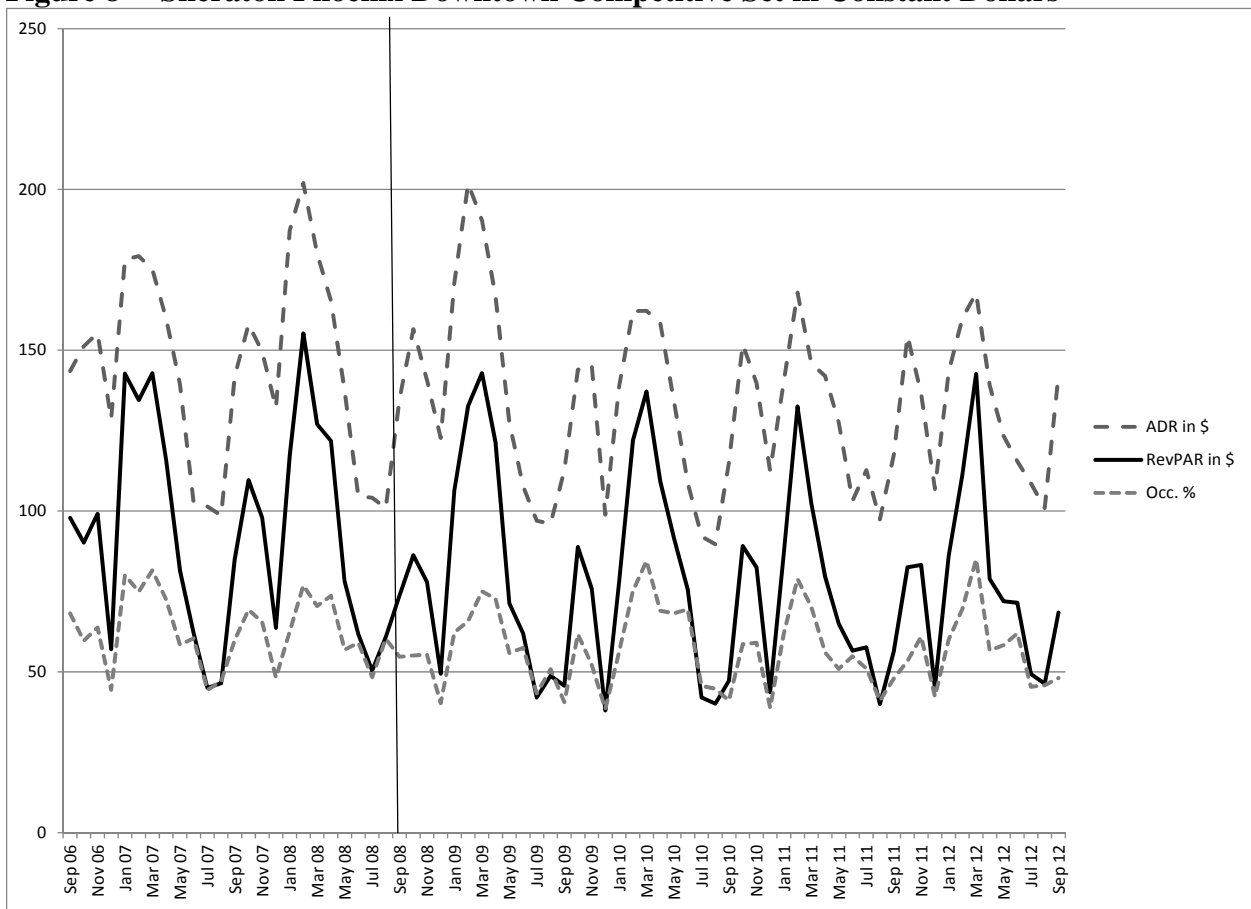


Figure 9 – Sheraton Phoenix Downtown Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

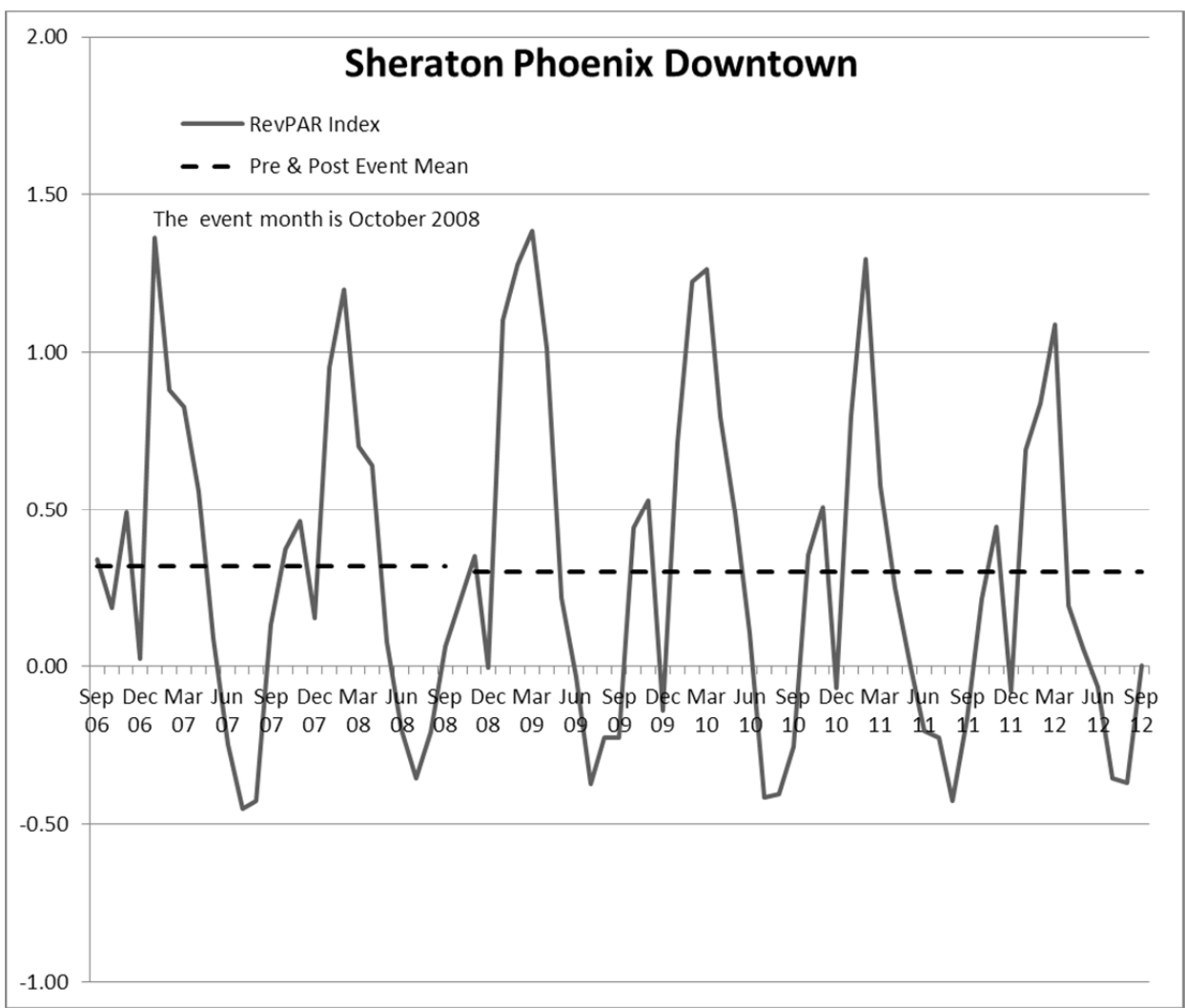


Figure 10 – Hyatt Regency McCormick Place (Chicago) Competitive Set in Constant Dollars

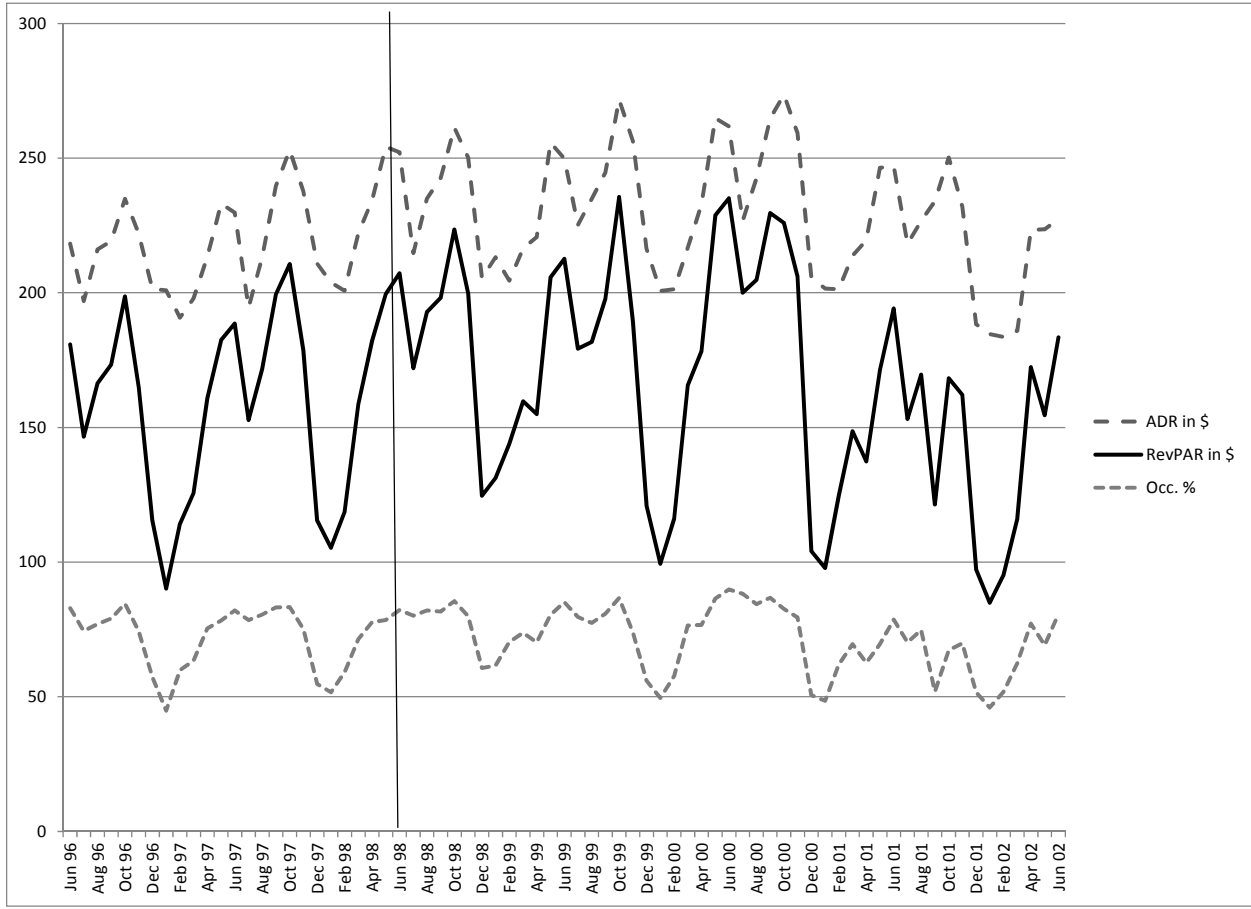


Figure 11 – Hyatt Regency McCormick Place (Chicago) Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

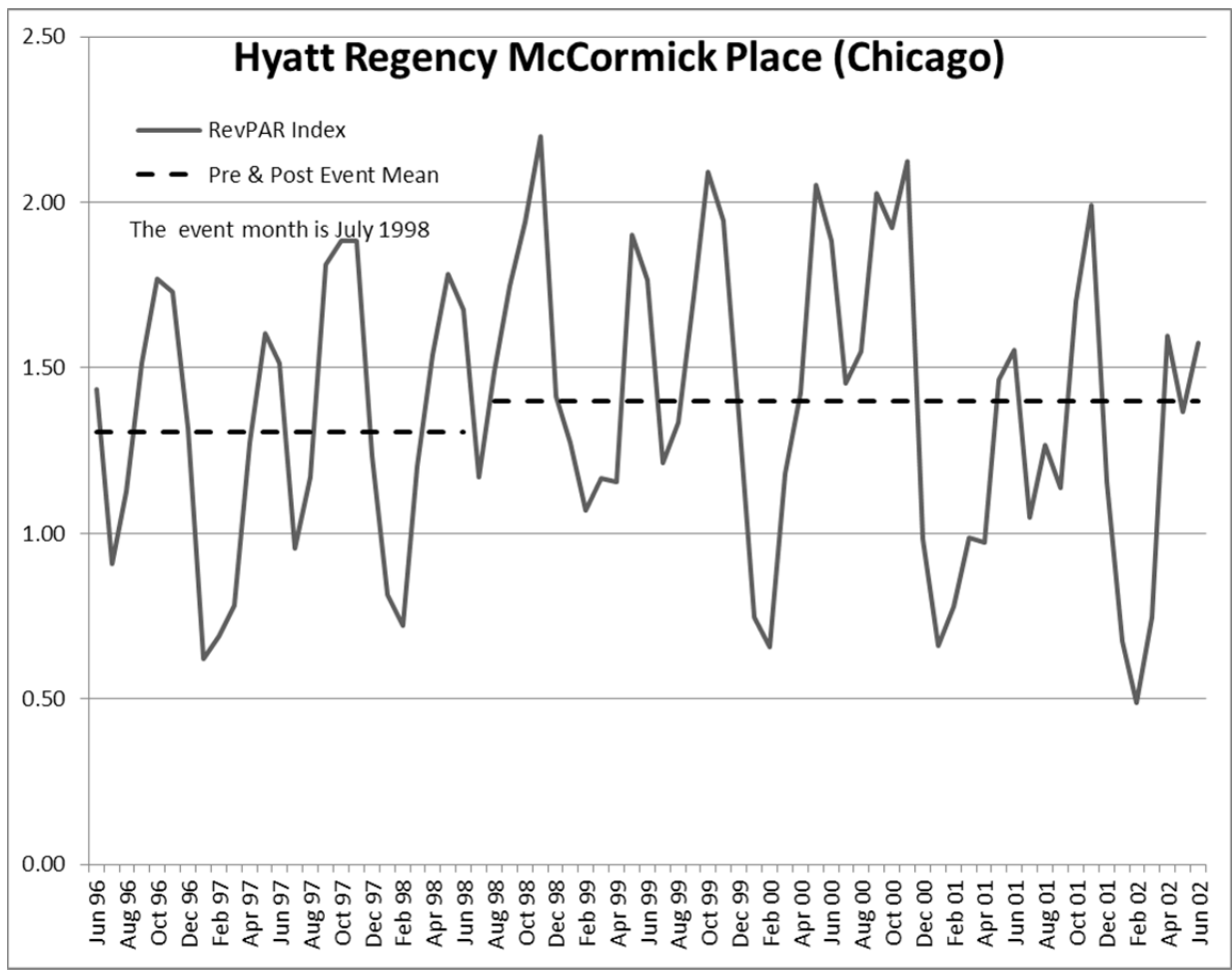


Figure 12 – Overton Hotel and Conference Center Competitive Set in Constant Dollars

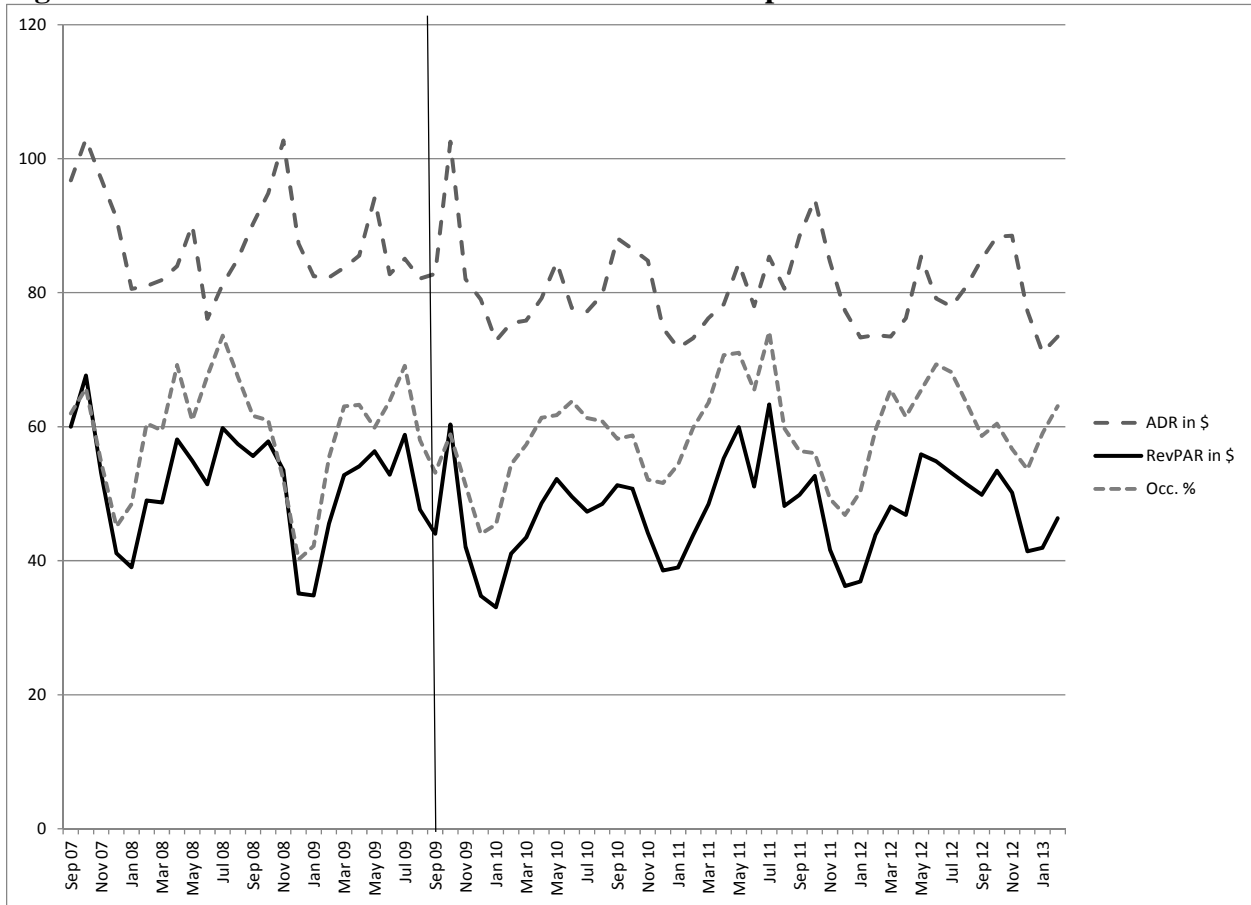


Figure 13 – Overton Hotel and Conference Center’s Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

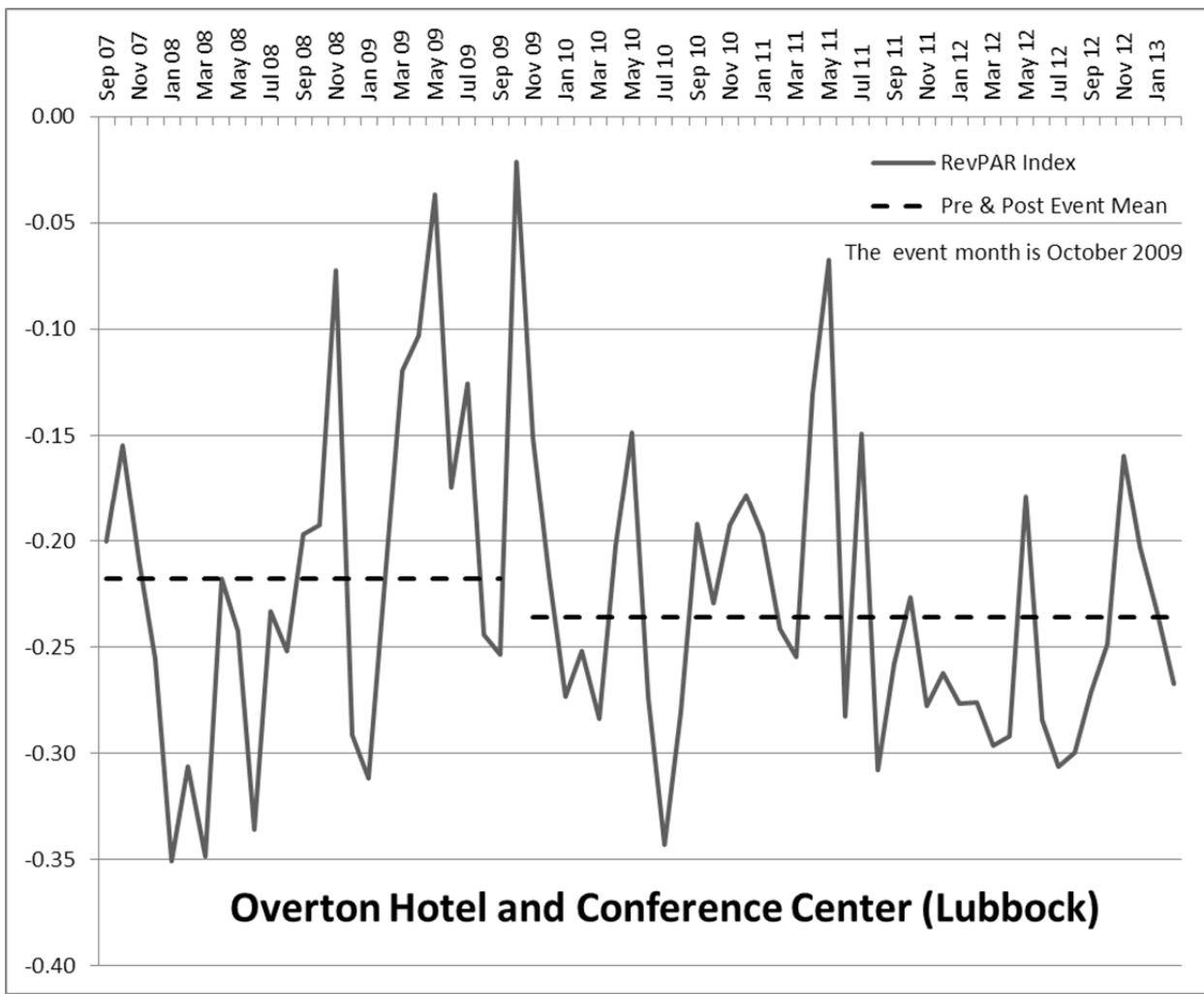


Figure 14 – Sheraton Grand Sacramento Competitive Set in Constant Dollars

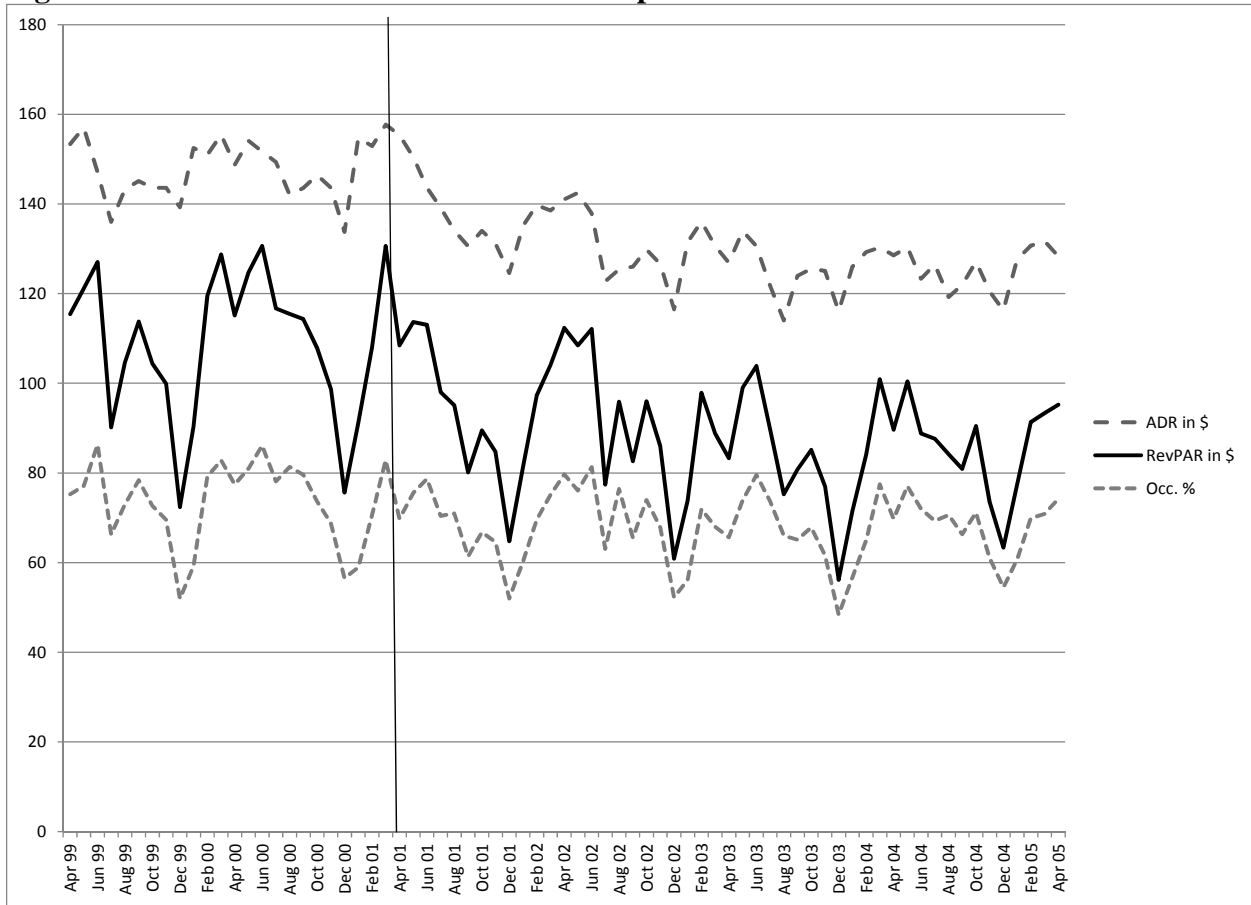


Figure 15 – Sheraton Grand Sacramento Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

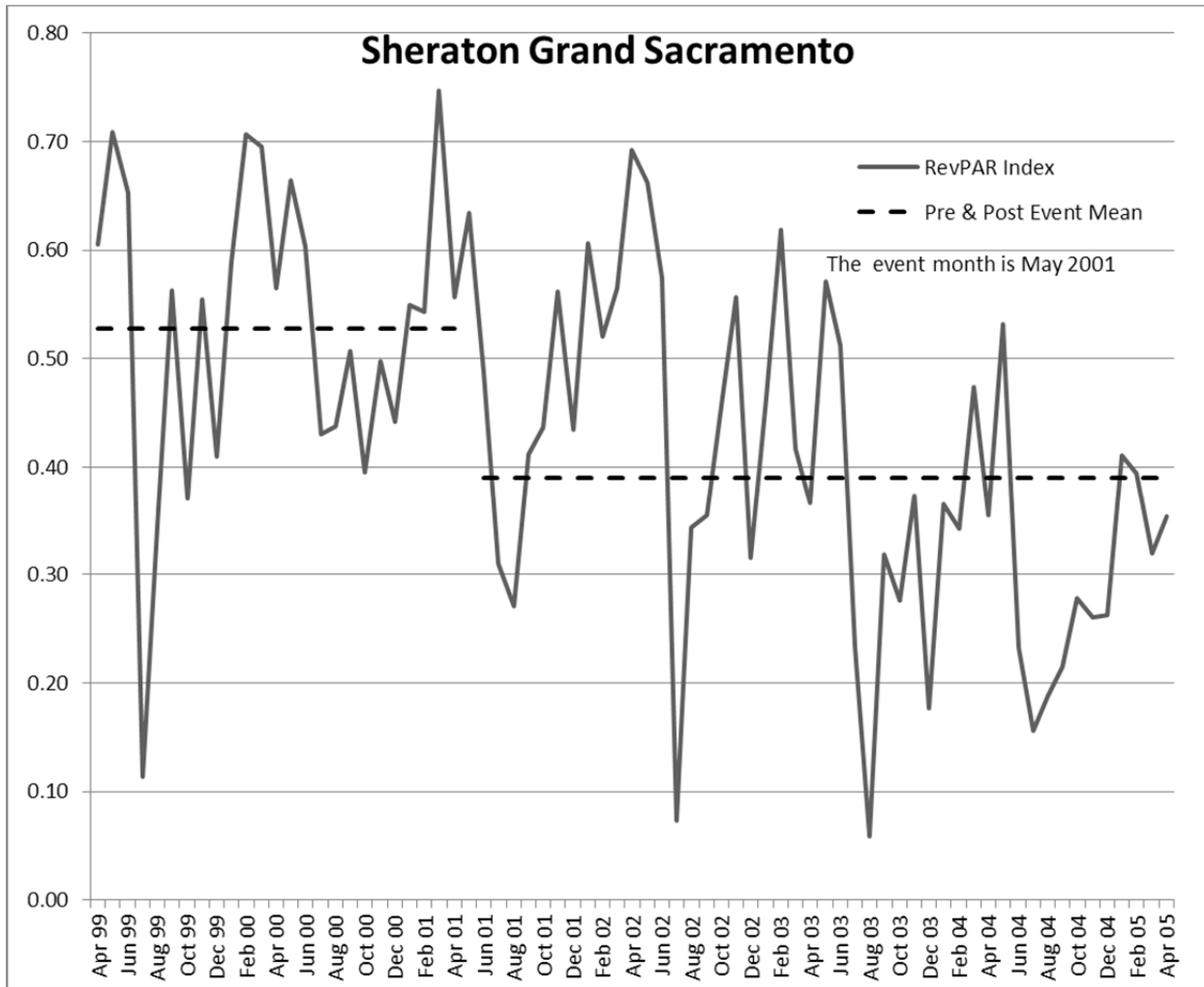


Figure 16 – Hilton San Diego Bayfront Competitive Set in Constant Dollars

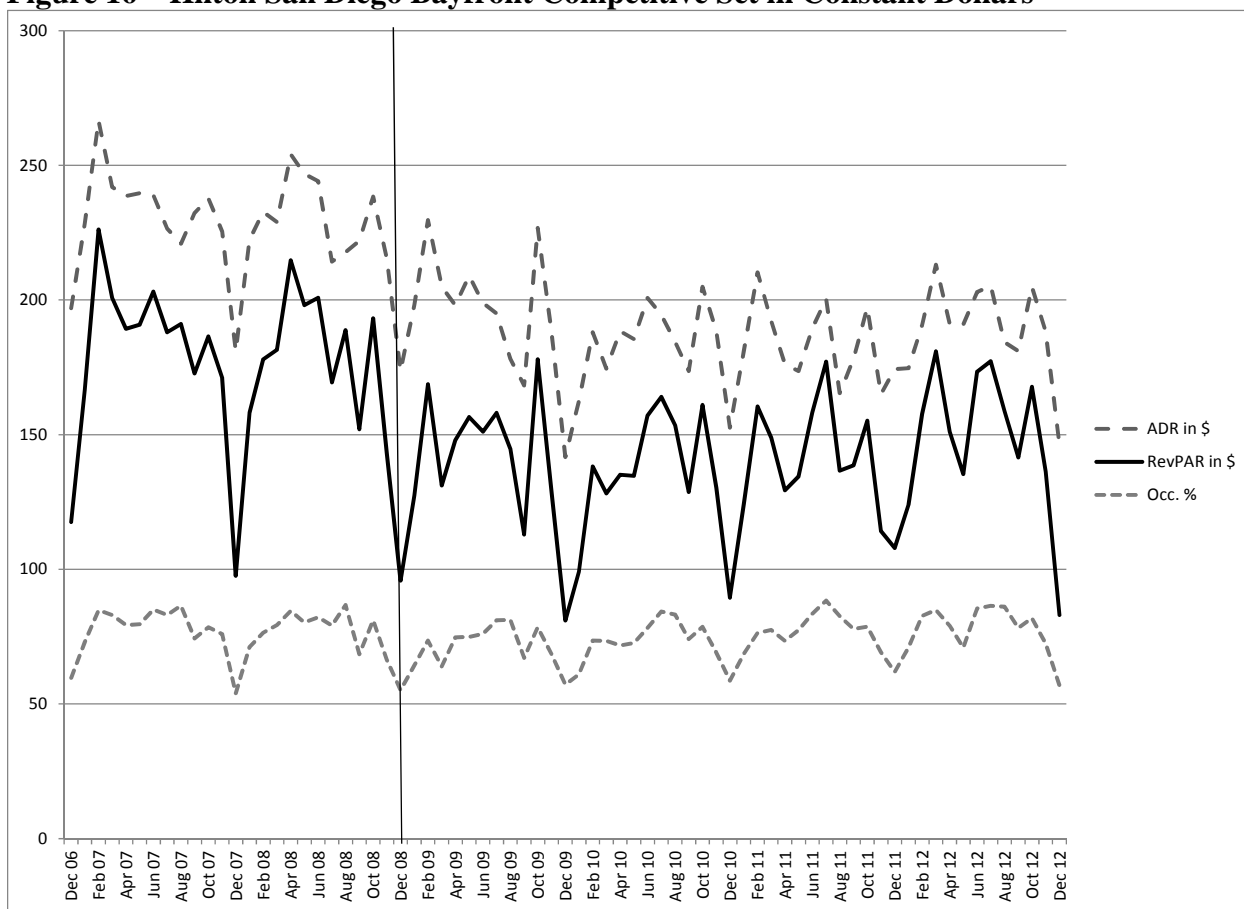


Figure 17 – Hilton San Diego Bayfront’s Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

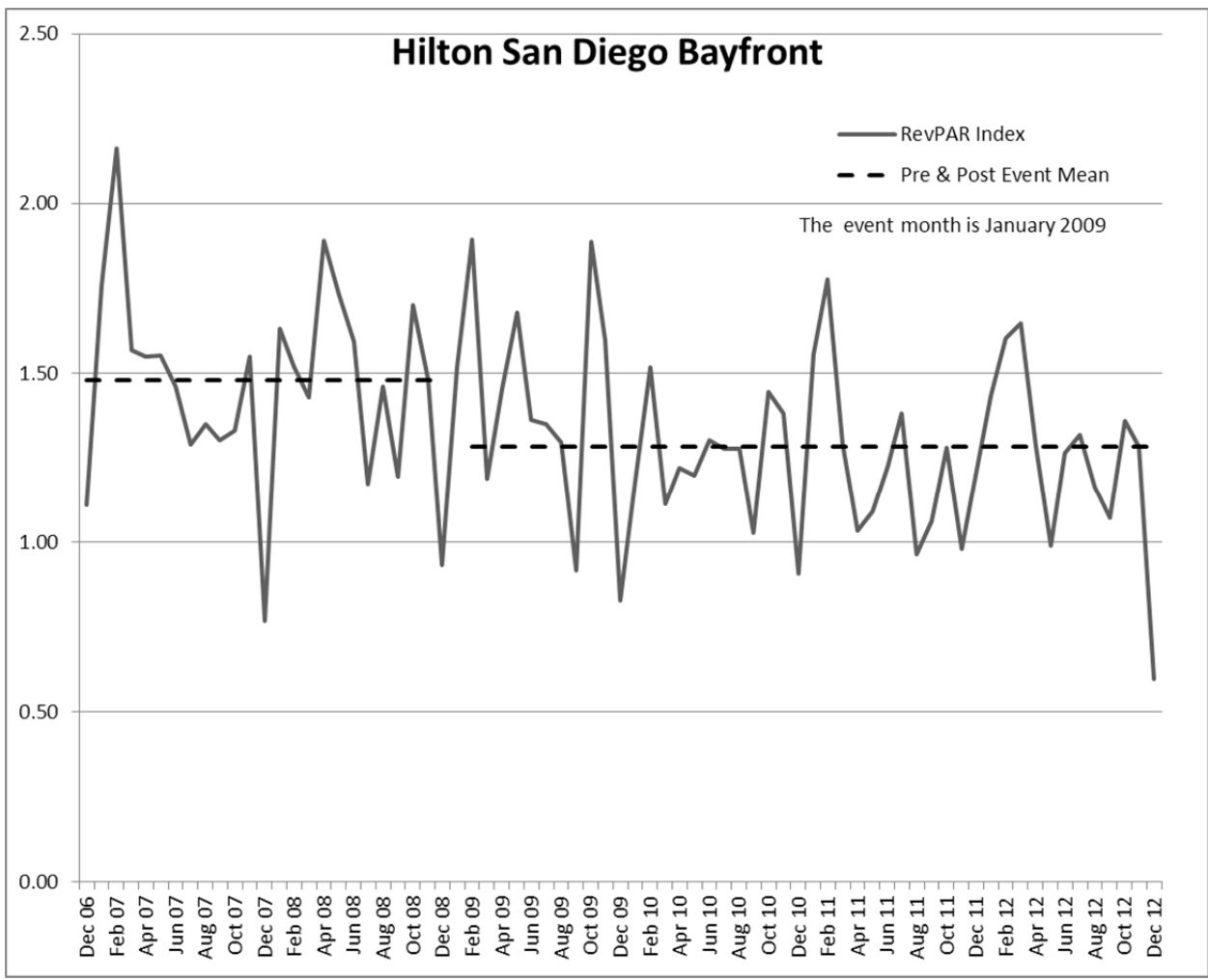


Figure 18 – L.A. LIVE J.W. Marriott / Ritz-Carlton Complex Competitive Set in Constant Dollars

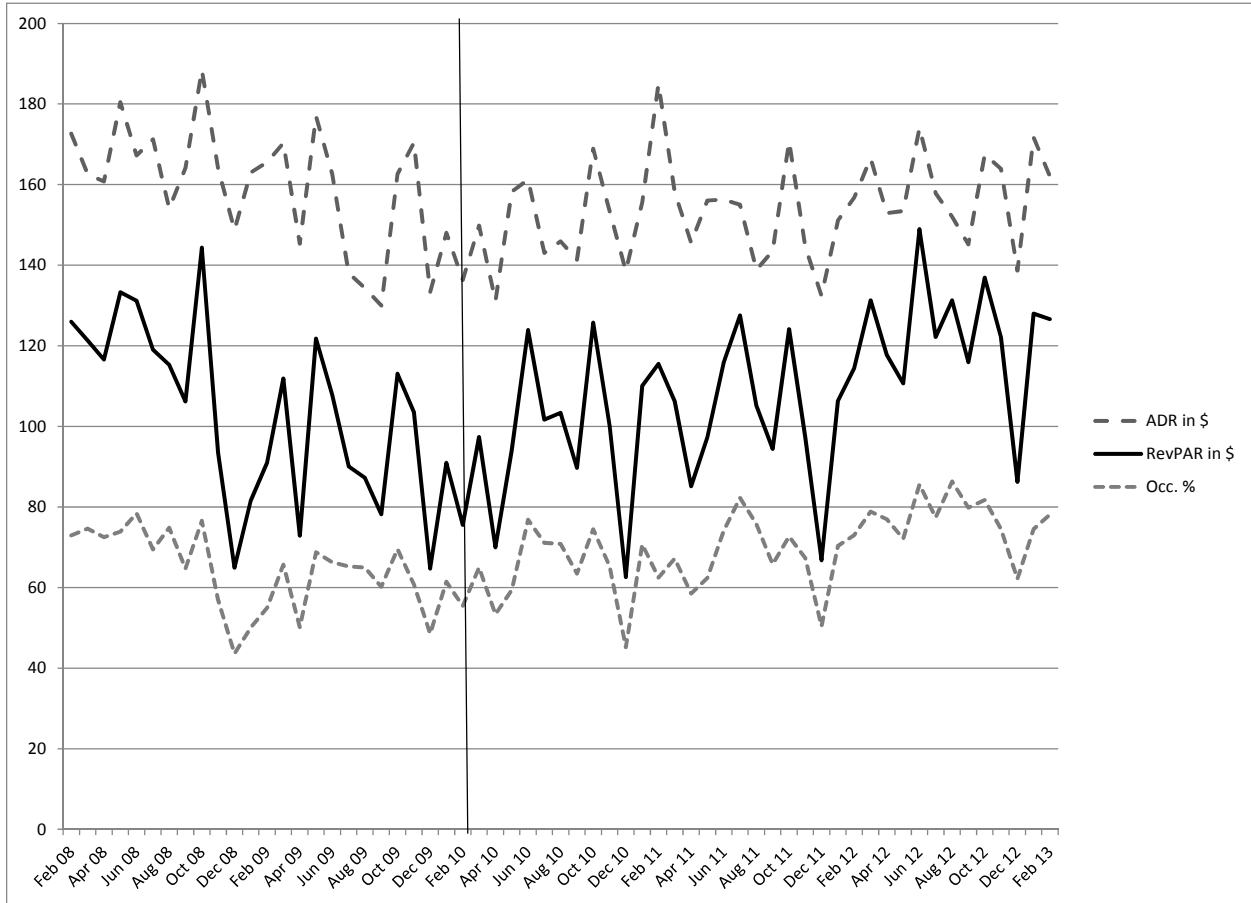


Figure 19 – L.A. LIVE J.W. Marriott / Ritz-Carlton Complex’s Competitive Set’s Indexed RevPAR Overlaid with Pre and Post Event Means for the Same

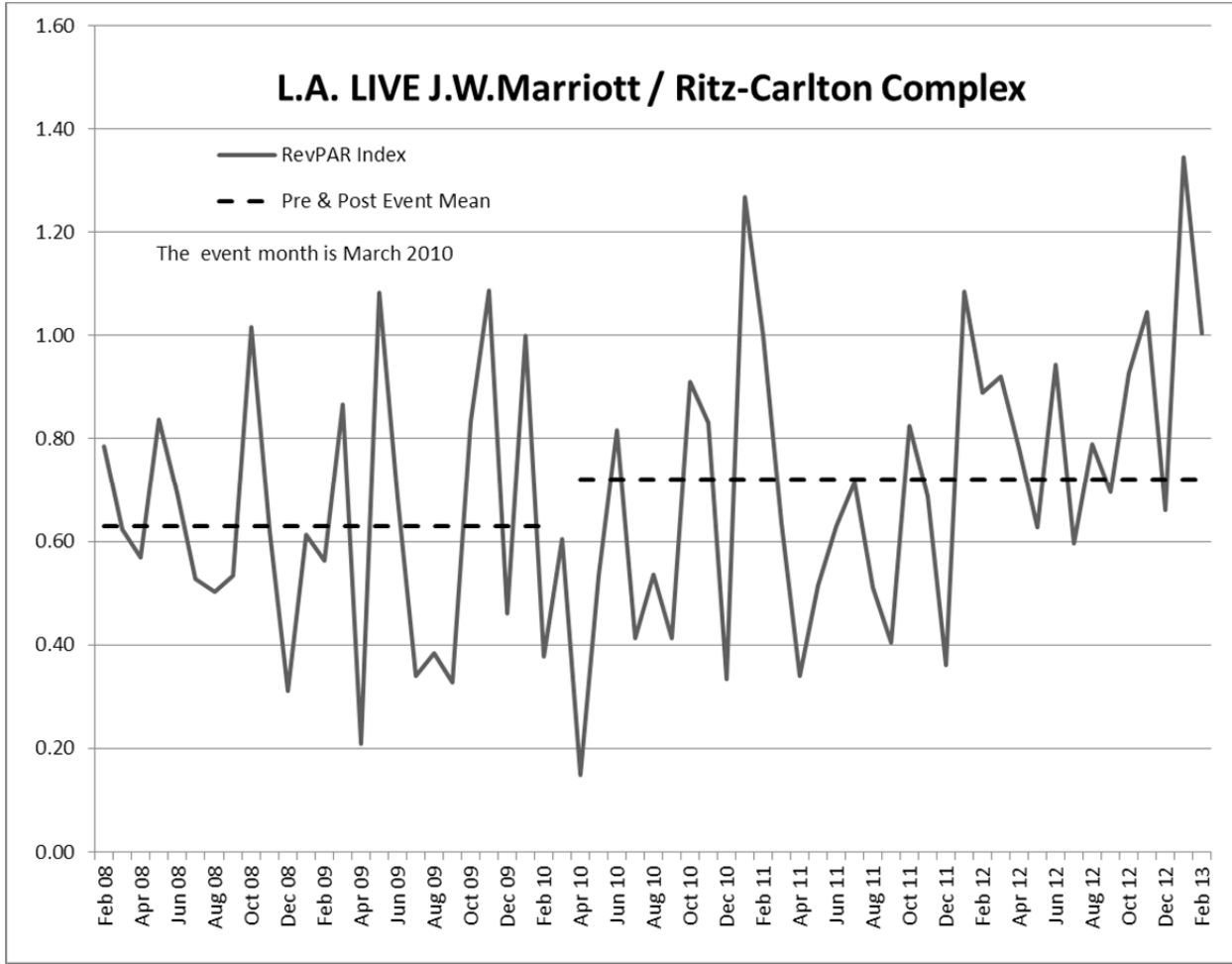
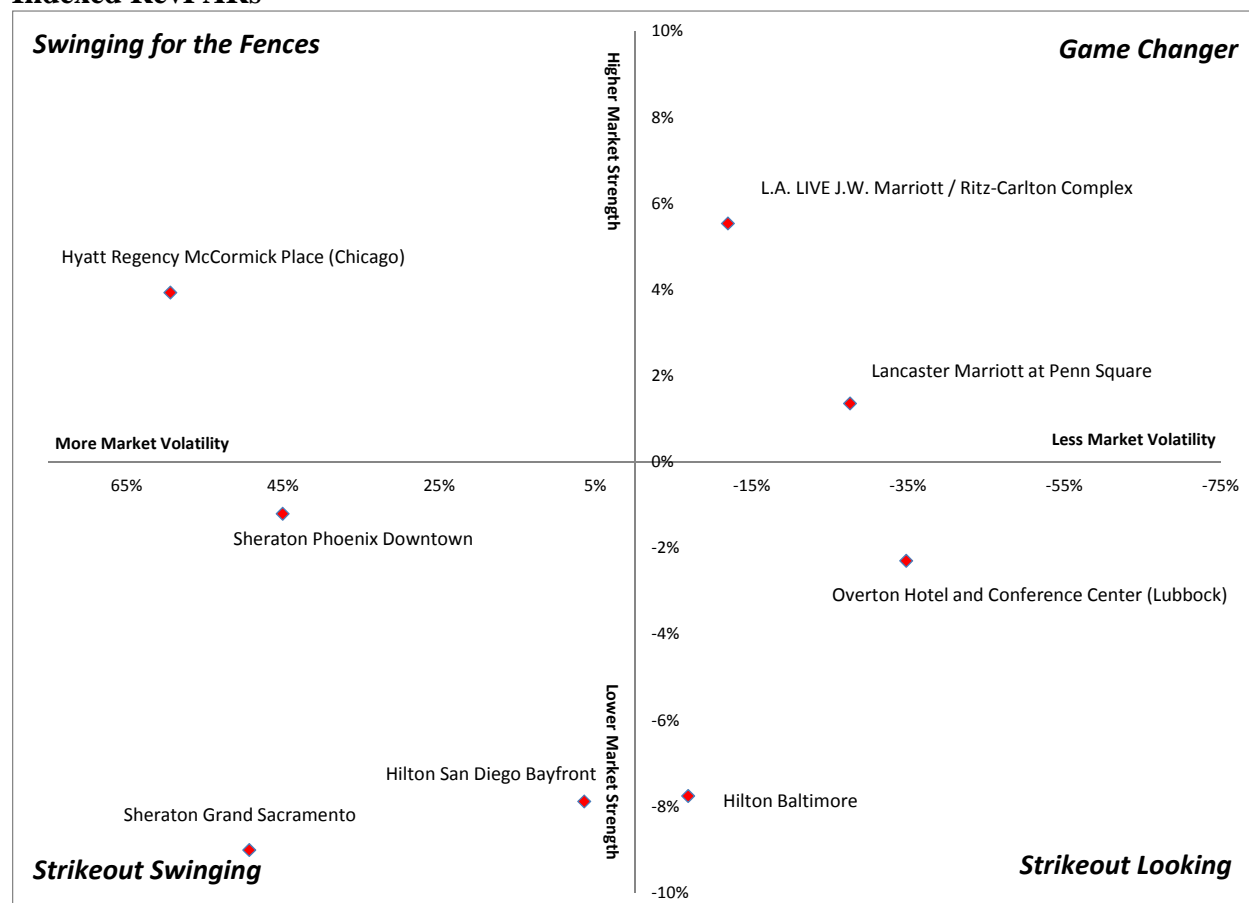


Figure 20 – Plot of Pre and Post Change in the Means of the Indexed RevPARs for Each Competitive Set Against the Change in the Pre and Post Standard Deviations of their Indexed RevPARs



<u>Market</u>	<u>Change in Indexed RevPAR</u>	<u>Change in Indexed RevPAR Standard Deviation</u>
Baltimore	-7.8%	-6.9%
Lancaster	+1.4%	-27.6%
Phoenix	+45.0%	-1.2%
Chicago	+3.9%*	+59.4%*
Lubbock	-2.3%	-34.8%
San Diego	-7.9%*	+6.4%
Sacramento	-9.0%*	+49.3%*
Los Angeles	+1.4%*	-29.6%

* = statistically significant at the 95% level

Table 1 – Data on Publicly Supported Hotels in the U.S.

Properties Identified as Receiving Subsidies = 118

Rooms = 53,852

Public Investment = \$8,253.6 million

Total Project Values = \$16,418.4 million

Mean subsidy = 50.2%

33 properties (28%) are financed in their entirety with public money.

TABLE 2 - Communities Considering Subsidies to Encourage Hotel Development (Reported hotel room count is shown adjacent to the city name)

Abilene, TX	300	El Paso, TX	220	Naperville, IL	168
Alton, IL	110	Enid, OK	131	Nashville, TN	400
Arlington, TX	300	Fort Lauderdale, FL	750	New Orleans, LA	245
Atlanta, GA	250	Fort Myers, FL	225	Norfolk, VA	300
Augusta, GA	139	Frederick, MD	200	North Augusta, GA	200
Aurora, CO	1,500	Glendale, CA	173	Oklahoma City, OK	600
Bellevue, NE	150	Green Bay, WI	146	Paducah, KY	121
Bellingham, WA	150	Hollywood, FL	1,000	Portland, ME	110
Boston, MA	480	Houston, TX	1,000	Portland, OR	600
Broken Arrow, OK	120	Huber Heights, OH	115	Rosemont, IL	150
Buffalo, NY	218	Hutchinson Island, GA	500	Salt Lake City, UT	1,000
Casper, WY	200	Joliet, IL	200	San Bruno, CA	131
Cedar Park, TX	221	Los Angeles, CA	250	Savanna, GA	160
Charlotte, NC	1,125	Louisville, KY	600	Seattle, WA	1,200
Chicago, IL	2,161	Madison, WI	400	Stroudsburg, PA	450
Cleveland, OH	600	McAllen, TX	121	Tyler, TX	250
Daytona Beach, FL	250	Miami Beach, FL	800	West Palm Beach, FL	400
Denton, TX	318	Missoula, MT	200	West Sacramento, CA	343
Des Moines, IA	450	Montgomery, AL	350	Grand Total	23,251

Source: Convention and Conference Facilities Newsletters, December 31, 2012 to June 6, 2013. Mediaventures.
 ccf@ccfacilities.com

Table 3 – PSHs Used in the Event Study

<u>Hotel Name</u>	<u># of Rooms</u>	<u>Year Opened</u>
Hilton Baltimore	757	2009
Lancaster Marriott at Penn Square	300	2009
Sheraton Phoenix Downtown	1,000	2008
Hyatt Regency McCormick Place (Chicago)	800	1998
Overton Hotel and Conference Center (Lubbock)	303	2009
Sheraton Grand Sacramento	500	2001
Hilton San Diego Bayfront	1,200	2008
L.A. LIVE J.W. Marriott / Ritz-Carlton Complex	1,001	2010

Table 4 – Summary of Market Changes After the Introduction of a Subsidized Hotel

Property	Year Open	# of Rooms	% Public Support	Change in Competitive Set's Performance Relative to U.S. Market After Opening		
				Occ. %	ADR	RevPAR
Hilton Baltimore	2008	757	100%	Flat	Down	Down
Lancaster Marriott at Penn Square	2009	300	44%	Flat with larger swings	Flat with larger swings	Slightly up
Sheraton Phoenix Downtown	2008	1,000	100%	Slightly down with larger swings	Flat with larger swings	Trending down with larger swings
Hyatt Regency McCormick Place	1998	800	100%	Flat	Slightly higher with larger swings	Slightly higher with larger swings
Overton Hotel and Conference Center	2009	303	33%	Flat	Slightly lower	Slightly lower
Sheraton Grand Sacramento	2001	500	100%	Lower	Lower	Lower
Hilton San Diego Bayfront	2008	1,200	13%	Flat	Lower	Lower
L.A. LIVE Complex J.W. Marriott / Ritz-Carlton	2010	1,001	32%	Higher	Flat	Higher