Strategic approach to smoking bans: The case of the delaware gaming industry

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A study of Delaware's statewide smoking ban suggests that it may have had a significant negative economic impact on the state's gaming industry. However, such impact may vary in different segments of the hospitality industry, and therefore, must be examined strategically and on a case-by-case basis. The specific market environment, including both demand and competition of each state or each municipality, should be carefully analyzed by both governmental decision makers and by hospitality operators who influence these decision makers.

The potential threat of anti-smoking policies has been substantially noticed by the hospitality industry in recent years. As secondhand smoke is associated with an increased risk for lung cancer and coronary heart disease,[1] in the United States, more and more states and local governments have introduced or are considering smoking bans in public places. While the health benefits of such regulations are apparent, a significant debate is whether they should be applied in the hospitality industry to the same extent as in other public places.[2]

Some studies have focused on the impact of smoking bans on hotels, restaurants, and bars.[3] Notably missing, however, is work aimed at other important sectors of the hospitality industry, such as the gaming industry. Further, most previous research in this area has failed to consider economic trends occurring in potentially competitive markets during the period when the subject market was analyzed. Moreover, most studies were funded by either anti-smoking advocacy groups or tobacco-related organizations, potentially biasing the researchers.

This article expands on previous research and attempts to overcome its limitations by considering the gaming industry in Delaware while simultaneously analyzing the gaming industry in West Virginia, a competitor of Delaware. Through comparing the casino revenues of Delaware and West Virginia before and after Delaware's statewide comprehensive smoking ban took effect in November 2002, the authors, who are not supported by either smoking or anti-smoking advocacy groups, examine the effect of smoke-free regulations on the hospitality industry in general, and the gaming industry in particular. While the negative social and health effects of smoking revealed in previous research are well understood, this study focuses on economic data. Based on the findings, this article highlights the distinctions of casinos compared with other hospitality industry segments, and outlines strategic implications in two possible future scenarios in which the gaming industry could minimize the potentially negative economic effects of smoking bans.

Smoking bans have mixed effects

As of July 2004, there were 312 jurisdictions in the United States that had "100 percent" smoke-free provisions in effect. More than half of these regulations exclude restaurants or bars, and most exclude casinos (if applicable). Among the 50 states, Delaware, Connecticut, Maine, Massachusetts, California, and New York have statewide anti-smoking policies in both restaurants and bars, while Florida, Idaho, and Utah only prohibit smoking in restaurants.[4]

Restaurants and bars are the most widely studied sectors within the hospitality industry with regard to the economic effects of smoking bans, and the results of the studies have been mixed. It is noticeable that many studies sponsored by health and anti-tobacco organizations revealed no negative financial impact from such regulations, while many other studies, which were supported by the tobacco industry, claim significant adverse economic effects. Despite the different perspectives of researchers, in general, a majority of the studies have shown that smoking bans have had no significant adverse impact on sales or employment in restaurants and bars.[5]

Although a large body of the previous research has focused on restaurants and bars, fewer studies have been dedicated to the gaming industry. Part of the reason could be that fewer states and local governments mandate anti-smoking policies in casinos. In the trade press, it has been reported that casino revenues have declined in virtually every jurisdiction mandating smoke-free regulations.

In the state of Victoria in Australia, a partial smoking ban, which only regulates smoking in the areas around gaming machines and gaming tables but not in the bars, was introduced in September 2002, and resulted in total revenue declining by 8.9 percent in a 10-month period thereafter. Whereas a 6 percent annual growth rate was forecasted by the industry before the Victoria smoking ban, it is now projected that it will take the industry seven years to recover to 2002 revenue levels. Due to a complete smoking ban anticipated to be introduced in Victoria in 2006, gaming expenditures in Australia are forecasted to experience their first ever decline of 3.2 percent in 2007.

In New Zealand, where anti-smoking policies have a December 2004 scheduled nationwide introduction, the net effect on total gaming expenditures is officially expected to be even more dramatic.[6]

Ban affects gaming

In the United States, there are three states that allow and regulate video lottery at racetracks: Delaware, West Virginia, and Rhode Island. In 1994, the Delaware legislature passed House Bill 628, the Horse Racing Preservation Act,. The bill legalized "video lottery operations" at the three Delaware locations where thoroughbred or harness horse racing was held in 1993:, Delaware Park, Dover Downs, and Harrington Raceway.

During each year from 1993 through 2002, gaming revenue grew in Delaware. The Delaware gaming market was regarded as relatively efficient in terms of revenue productivity. In 2002, the revenue per slot machine per day in Delaware was $290, ranking fourth among 20 major American slot machine gaming markets. Such relative profitability suggested room for potential expansion as recently as 2002.

By December 2002, there were 5,430 slot machines in the three racetrack casinos, which contributed more than $200 million annually to the state, making up approximately 8eight percent of the state budget. Depending on which of the three facilities is being analyzed, between 65 and 84 percent of gamblers come from out of state. Pennsylvania, Maryland, and New Jersey are the top three feeder markets for the three casinos, and Washington, D.C., and Virginia are significant feeder markets, as well.[7]

On November 27, 2002, the "Delaware Clean Indoor Air Act," a comprehensive smoking ban, went into effect. This smoking ban outlawed any smoking in all indoor public places, including restaurants, bars, and casinos, and was admired as the strictest and most wide-ranging anti-smoking policy in the country. However, the smoking ban has resulted in Delaware experiencing the nation's largest loss in casino revenues. Delaware's gaming revenues have continuously declined every month since December 2002, resulting in an annual 10.6 percent negative growth rate in 2003, after increasing during every year before the ban.[8] Even Governor. Ruth Ann Minner acknowledged that the state budget would experience a potential loss of as much as $57 million annually at the time she signed the regulation in May 2002. In addition to the decline in direct gaming revenue, Delaware could have indirect losses in other related businesses, such as tourism, as well.[9]

West Virginia benefits

In the state of West Virginia, four race tracks, Mountaineer Park, Charles Town Races, Wheeling Downs, and Tri-State Racetrack and Gaming Center, were authorized to operate video lottery machines in 1994. Five years later, West Virginia passed a bill, referred to as the "Limited Video Lottery Act," allowing for a maximum of 9,000 slot machines in bars and restaurants serving alcohol, and a maximum of five slot machines per establishment.[10] Despite steadily growing revenues and contributions to the state's tourism, education, and senior citizen programs, West Virginia's slot machines have had a much lower level of profitability than Delaware's. At the end of 2002, there were 9,754 slot machines in the four race tracks and 5,329 slot machines in 1,600 bars and restaurants. The revenue per slot machine per day in West Virginia was $182, ranking 11th among 20 similar markets, and more than a third of 9,000 allowable limited video lottery licenses remained unclaimed.[11] Ohio, Virginia, Pennsylvania, and Kentucky are major out-of-state feeder markets, and Maryland and Washington, D.C., generate demand, as well.[12]

As one of the competitors of Delaware's gaming industry, West Virginia's gaming revenue has seen a double-digit growth rate since Delaware's smoking ban went into effect. Video lottery revenue was reported up 32.6% percent in the fiscal year ending June 2003 and 23.2% percent in the fiscal year ending June 2004.[13] Since March 2003, the West Virginia Lottery Commission has approved 1,000 and 500 additional slot machines at Charles Town Races and Mountaineer Park, respectively.[14] Although many factors could contribute to such a dramatic growth, this study concludes that this growth was partially attributable to the loss of smoking gamblers in Delaware, where the gaming industry experienced declines during the same period.

Regardless, two significant limitations were identified in the existing literature on the effect of smoking bans on the gaming industry. First, most of the literature was published in gaming-oriented trade magazines, such as Global Gaming Business, and these studies may be biased. Second, the lack of rigorous research-design, systematic data analysis, and peer-review process further weakens the persuasiveness of previous articles. This study seeks to provide insights into the "smoking ban on revenue" dilemma based on systematic procedure and robust statistical analysis.

Time series approach used

This study is designed to explore the economic effects of the smoking ban on Delaware's gaming industry, while comparatively examining the gaming industry in West Virginia, where no such ban was in effect. The casino revenue data were obtained from the Delaware State Lottery and West Virginia Lottery. Due to the fact that the smoking ban in Delaware has been in effect for fewer than two years, to take into account the yearly cyclicality of the gaming industry, the data were collected to include both states' casino revenues 12 months before and 12 months after the smoking ban became effective. Since the original data consist of uneven periods (some periods had four weeks' revenue and some had five weeks' revenue), they were adjusted to be comparable. By multiplying the revenue numbers of all five-week periods by 80% percent, the estimated four-week revenue of each period was obtained.

Although the time series approach is mostly used for forecasting, it is also commonly applied for explanation purposes.[15] In particular, while the authors acknowledge that the sample consisting of only 24 monthly revenue figures is normally considered to be relatively small, a time series approach is statistically sound for this study because the data (monthly casino revenues) were collected repeatedly over time in both states and show clear cyclical patterns throughout the year. Consequently, to reveal the changes of both states' casino revenues after the Delaware smoking ban became effective, a time series autoregressive model is fitted with computer-based SAS software for each state. In each model, casino revenue is the response variable. The explanatory variable is the presence or absence of the smoking ban, which is a "dummy" variable, coded as 0 for the absence of the Delaware smoking ban and as 1 for the presence of the ban.

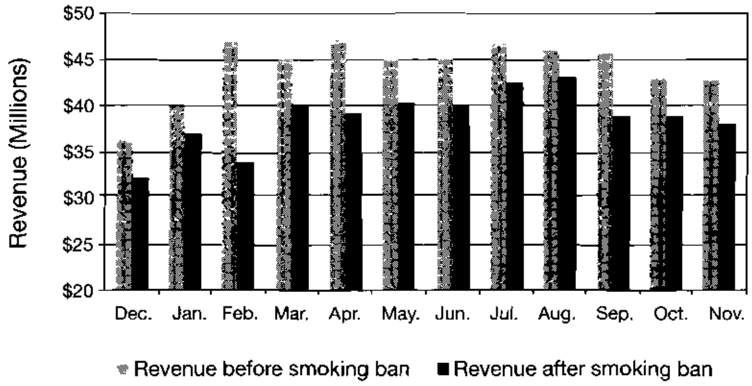
It is noticeable that the number of slot machines increased in both states during the study period. Delaware had gradually added a total of 247 terminals in the two years, while there was only one considerable change in West Virginia as the Charles Town Races added 746 slot machines on July 1, 2003.[16] To examine the potential effect of the increased number of slot machines on the revenues, the number of each state's slot machines was originally included in the time series autoregressive model as a second explanatory variable. However, the statistics reveal that the number of slot machines is not a significant factor in explaining the revenue trends in either state ($p > 0.05$). Therefore, this factor was not incorporated in the final model.

Changes are significant

The results of the analyses of both states indicate that, after Delaware's smoking ban took effect, the revenue changes (decrease or increase) in both states were significant ($p < 0.001$). In the analysis of Delaware, the autoregressive model shows that the presence/absence of the smoking ban is effective at predicting casino revenues ($R2 = 72.2\%$ percent, $p < 0.001$). The model concludes there was a significant decrease in Delaware's casino revenue since November 2002. This trend is clearly shown in Exhibit 1.

Similarly, the autoregressive model fitted for West Virginia reveals that there is a significant increase in its casino revenues since November 2002, when the Delaware smoking ban went into effect ($R2 = 47.9\%$ percent, $p < 0.001$). The magnitude of the overall model for West Virginia is less strong than the one for Delaware, and, therefore, it suggests the plausibility of other factors as additionally explaining the overall upward trend in West Virginia. The authors believe, however, that this model effectively explains the correlation between Delaware's smoking ban and West Virginia's casino revenues (as well as Delaware's) based on the statistics presented. Exhibit 2 shows the significant improvement trend of casino revenue in West Virginia during the study period.

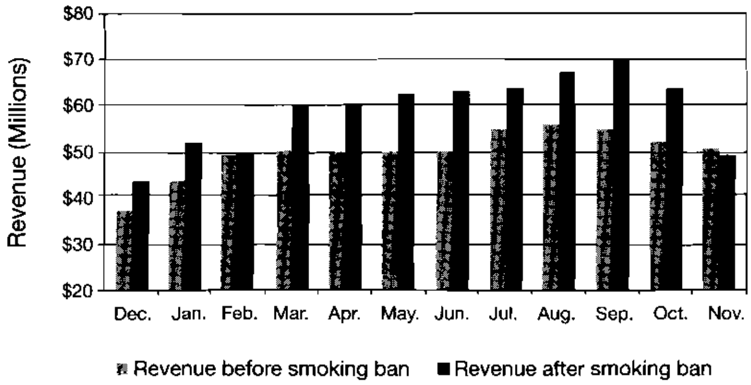
Exhibit 1: Adjusted Monthly Casino Revenue in Delaware



Results reveal impact

Smoking bans are currently viewed as one of the single greatest threats to consumer expenditures and long-term

Exhibit 2: Adjusted Monthly Casino Revenue in West Virginia



strategies in the hospitality industry of many markets around the world.[17] As statewide smoking bans have not yet been commonly instituted in most states where gaming is a major industry, Delaware is to date the most significant case regarding the effects of smoke-free regulations. The findings of this study indicate that, at least in the short term, Delaware's smoking ban indeed has had a negative effect on the revenue of Delaware's gaming industry. Simultaneous to this downward trend, West Virginia's gaming industry (one of Delaware's competitors), where there was no smoking ban, registered significant revenue improvement. However, this study may not have yielded a final conclusion that could be generalized worldwide.

While gaming revenues of the two states were presented comparatively, the results of the data analysis should be treated cautiously. On the one hand, it may be argued that some gaming patrons who are smokers and reside in neighboring no-casino states (Pennsylvania, Maryland, Virginia, and Washington, D.C.) could easily travel to gaming venues in either Delaware or West Virginia, and might have elected to more frequently patronize West Virginia establishments over those in Delaware after the smoking ban went into effect.

On the other hand, alternative explanations could exist. This study takes a few possible alternatives into consideration. In addition to the previously mentioned test of scrutinizing the potential impact of the increased number of slot machines on the revenues during the study period (which was found to be an insignificant predictor), the authors examined the marketing efforts of both states as well, and found that there was a bigger drop in marketing expense in West Virginia (-6.2%

percent) than in Delaware (-3.7% percent) during 2003.[18] Therefore, the increase in West Virginia's gaming revenue could not be attributed to the change of the state's marketing expense. Indeed, such data appear to confirm support that the Delaware smoking ban was a significant factor in the subsequent revenue trends in both Delaware and West Virginia.

However, the authors acknowledge that wide-scale consumer research would be required to most comfortably draw a concrete conclusion of causality from the smoking ban to its effects on the gaming industry. Instead, by revealing the opposite revenue trends in Delaware and West Virginia, this study aims to expose the distinctions of casinos compared with previously studied hospitality segments, to indicate two possible future scenarios in which smoking bans may have effects on the gaming industry, and to delineate strategies for industry practitioners in their efforts to minimize the potential negative effects of smoking bans.

Findings provide contrast

The findings of this study are not consistent with the results of most previous research on the effects of smoking bans on restaurants and bars. The authors propose that this contrast reflects a fundamental difference between casinos and restaurants/bars. While restaurants and bars primarily compete at a local level, studies reveal that in many states casino revenues are primarily generated through out-of-state patronage.[19]

It is interesting to note that Delaware's earlier proposed anti-smoking bill, which included a provision allowing smoking in casinos, was not approved in 2001. One of the important reasons was that restaurants, led by the Delaware Restaurant Association, had strongly opposed that bill because it would put the traditional restaurants at a severe disadvantage in their competition with restaurants and bars in casinos. After the anti-smoking bill was revised to include casinos, the Delaware Restaurant Association withdrew its opposition.[20] While Delaware's restaurants have avoided the smoke-free disadvantage because their business is mostly local, unfortunately, its casinos have been put in an underprivileged position of competing with gaming establishments in nearby states where smoking is allowed.

A classic case is Philadelphia, the nation's fifth largest gaming feeder market, which generates over 13 million casino trips annually.[21] Philadelphia is about a 50-minute drive from Atlantic City and a 25-minute drive from Wilmington, Delaware, where the largest Delaware gaming venue is located. It may be assumed that smokers would probably drive a few extra minutes to a casino where they can smoke when playing slots. In fact, after the Delaware smoking ban went into effect, slot machine revenues increased over 2two percent in Atlantic City (in 2003).

Another more recent example corroborating this trend occurred in Pierce County in the state of Washington, where a smoking ban went into effect in January 2004. Those smoke-free casinos experienced an immediate negative impact, reporting a 25 percent decline in food revenues, a 42 percent decline in liquor revenues, a 35 percent decline in gaming revenues, and began significant layoffs during the first quarter of 2004. Yet, the tribal gaming houses, which are exempt from the county smoking ban, and the casinos in neighboring counties allowing smoking, have reported increased revenues since the smoking ban went into effect.[22]

Strategies minimize impact

The complicated competition mix of casinos, which are often regulated by different legislations, cautions that the effects of smoke-free regulations on the gaming industry must be examined strategically and on a case-by-case basis. The specific market environment, including both demand and competition of each state or each municipality, should be carefully analyzed by both governmental decision makers and by hospitality operators who influence these decision makers.

It is undeniable that mandating a comprehensive smoke-free regulation may be beneficial for public health. However, in states and municipalities where casinos would be most seriously affected by smoking bans due to regional competition, reasonable strategic compromises could minimize such negative effects while still achieving the primary goal of creating healthier environments.

It is to be expected that smoking bans will be introduced into more states and municipalities in the future, primarily in the United States initially, and, eventually, throughout the world. Two likely scenarios could be proposed: first, a few more states may join Delaware in introducing similar comprehensive smoke-free regulations that would outlaw smoking in casinos, and, second, some states will establish smoking bans that exclude gaming establishments. In either scenario, given the potentially significant negative economic impact smoking bans can have on the gaming industry, careful strategic considerations should be evaluated by both legislators and industry practitioners.

From the legislators' perspective, the challenge lies in how to qualify and quantify the economic impact of smoking bans on the gaming industry and then to balance such impact with other economic and social impacts and benefits. To the gaming industry, although the second scenario is less challengeable and more preferable, in fact both scenarios require significant monetary and non-monetary input. The following section provides detailed strategic suggestions to industry practitioners regarding these two scenarios.

Other states differ

In states and municipalities that do not rely heavily on smoking gamblers and where out-of-state competition is not fierce, it will not be highly detrimental to have universal smoking bans implemented. Due to the smoking bans not generating significant competitive disadvantages for the casinos in those states and areas, the effects will not be as significant as the economic losses experienced in Delaware. In such states, one of the primary strategies for casino operators to pursue may be persuading the policy makers to provide casinos some reasonable compensation to offset possible revenue losses.

For example, allowing casinos to have more slot machines, to extend their operating hours, and to expand slot machine selections to target new customers could be at least partially beneficial to casinos and to state revenue. Moreover, another approach could be promoting the state's or a particular casino's smoke-free environment. Depending on the demographics of customers, smoke-free regulations could even enable casinos to gain competitive advantages. A few casinos that voluntarily became smoke-free have had some success in this regard.[23]

Among the states that have slot machine operations, the authors believe that most of them should and will exclude casinos from their smoke-free regulations. As discussed previously, in the states where the gaming industry is a major employer, the potential negative economic impact of a smoking ban could go beyond the casino revenue losses to include a decline in tourism in general, and lost jobs as a result of that. To avoid such a serious loss, it is strategically crucial for the gaming industry to make all possible efforts to assess the economic effect of smoking bans and to assist policy makers in understanding the significance of such impact.

Equally important, industry leaders should suggest reasonable alternative regulations that could protect both non-smokers and casinos. Instead of adopting a comprehensive smoking ban, casinos may be required to comply with other specific regulations such as separating smoking and non-smoking areas with physical walls, and meeting high air quality equipment and measurement standards. Fortunately, sophisticated air replacement and filtration systems have become available to greatly improve the air quality even in smoking areas and to isolate non-smoking employees from smoking customers.[24] In the casino industry, the availability and use of such advanced technology plays a critical role in minimizing the negative economic impact of smoking bans.

Options are offered

The authors hope the results of this study will provide both policy makers and industry practitioners with valuable insight into the strategic threats, opportunities, and possible options related to implementing smoke-free regulations. However, the findings of this study should not be interpreted to indicate that smoking bans permanently hurt all casinos equally worldwide. More research is needed to fully assess the impact of smoking bans on the gaming industry.

Although the situation of Delaware is the only case with available revenue data to date, it is reasonable to expect that various markets may respond differently in the future. When more jurisdictions mandate smoking bans, like Pierce County in the state of Washington did in 2004, more data will become available, and, consequently, future studies incorporating more smoking-ban-affected gaming markets would be informative. Furthermore, it is possible that many casinos will benefit from smoking bans in the long run because as people adjust to the change over time, more and more non-smoking gamblers may prefer to stay and play longer in a smoke-free environment.

The available data prevented this study from examining any long-term effects because the Delaware smoking ban, the earliest such regulation, was in effect fewerless than two years at the time of this study. Future research might focus primarily on comparing the short-term and long-term effects of smoking bans when such data become available, and thus would reveal a more complete picture.

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