

# The effect of lodging tax increases on US destinations

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## Abstract

This study examined the impact of lodging tax increases on eight different destinations of the United States. Data were collected via in-depth stakeholder interviews and monthly statistics provided by Smith Travel Research including average daily rate, occupancy, and revenue per available room. Time series analysis was employed to estimate the impact of tax increases in each destination by analyzing that time series before and after the imposition of the tax. Overall, our results did not fully support the hypothesis that when a city's hotel tax greatly increases above that of an easily accessible competitor, it will result in an economic loss to the city with the disproportionate tax rates. Hotels appear to have absorbed any tax increases with little impact to their businesses, but there was concern among stakeholders as to how the lodging tax was spent.

## Keywords

destinations, hotels, lodging tax, tax increase

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## Introduction

A hotel lodging tax is a tax placed on each night's stay at a hotel and may also be called a tourist tax, room tax, bed tax, or sales tax. Because most lodging taxes are characterized as "ad valorem"—meaning they are charged as a percentage of the room rate rather than as a flat fee—they generate substantial revenue. In 2017, for example, New York City took in US\$582.5 million in lodging tax revenue, up over US\$200 million since 2010 (Hazinski et al., 2018). Most lodging taxes are used for general fund purposes to promote convention and tourism and to finance public facilities. In fact, travelers pay a large share of state tourism budgets, with lodging and traveler sales taxes contributing 90.5% of the total of US\$837.6 million budgeted for fiscal 2013–2014 (Povich, 2015). However, there are a number of states and municipalities where travel tax revenue is not primarily directed to travel and visitor amenities or to general revenue (Global Business Travel Association, 2013).

The lodging tax, as all other taxes, was created as a way to increase government revenues. Instead of increasing taxes on local residents (property taxes for example), state and local governments turned to the nonvoters. While the legal incidence of the tax may fall on the travelers, the economic burden of the lodging tax is shared by both providers of lodging accommodations and their guests. A lodging tax raises the room rate, and depending on the elasticity of supply and demand for the room, the hotel manager may not be able to increase rates by the full amount of the tax (Hazinski and Moon, 2016). Mak (2015) found that full "forward shifting" is unlikely, and Hiemstra and Ismail (1993) found that guests ultimately pay over six times as much of the tax as does the lodging industry. This means that about 86% of the total tax is paid by the guests and about 14% of the total must be absorbed by the industry by either lower room rates or reduced occupancy.

Lodging tax rates can vary from city to city and even from neighborhood to neighborhood. For instance, all Manhattan hotels generally have a 14.75% occupancy tax rate but rates within Los Angeles are different; tax rates are 15.5% in Hollywood while in Santa Monica occupancy tax run at 14.0%.

## What happens when the lodging tax is increased?

Lodging taxes are regularly increased (Povich, 2015). The Las Vegas Strip, for example, recently increased rates from 12% to 13.38% in March 2017. In some cases, the tax burden—on top of high airfares and room rates—is significant enough to make some travelers alter their plans, cut their stay short, or seek out cheaper properties (White, 2011). US Travel's Travel Tax Institute found that in 2011, 49% of travelers had altered their plans due to higher travel taxes, by staying at less-expensive hotels, spending less on shopping and entertainment, and visiting during the off-season (Hotel Interactive, 2011).

Raising taxes too high can also make a destination less attractive for large event bookings or price-wary groups (Anderson, 2015; Povich, 2015). For this reason, cities are sometimes cautious in escalating taxes for out-of-towners (Cetin et al., 2017). San Francisco contemplated raising its 15.5% hotel tax in 2010 by an additional two percentage points but rejected the measure after vociferous criticism from local businesses (White, 2011). One study in Turkey found that tourists are more likely to pay an additional amount of tax when this is earmarked for improvements in their experiences, but they are reluctant to take on a liability concerning matters relating to destination sustainability (Cetin et al., 2017). The researchers also found that when tourists are able to

decide where the finances are spent, they would be more than willing to pay a tax. In their study, improvements in experiences were grouped under general infrastructure, tourism infrastructure, tourist services, and community welfare themes.

Other studies show that sensitivity to lodging taxes depends on whether the area is a tourist destination and whether there are hotels of the same class or status with similar amenities in a neighboring jurisdiction with lower lodging taxes. In the latter case, the difference in lodging taxes could hurt hotels in locations with higher tax rates, particularly those whose main business is hosting conventions and business travelers (TACIR, 2016). Hotels in jurisdictions with higher tax rates may find it necessary to lower their room rates to remain competitive. These hotels themselves may come under pressure from the convention and conference booking industry to lower their rates. For example, when combined sales and lodging tax rates in the city of New York reached 21.25% in 1990—the highest rate in the country and more than twice the average rate for major US cities—convention organizers boycotted the city. Although, according to the Independent Budget Office of the City of New York, demand for hotel rooms was still increasing strongly and boosting tax receipts 4 years later, the State of New York repealed its 5% lodging tax, and the city reduced its rate from 6% to 5%, making the overall rate 15.25%. Following the reduction, tourism and tax revenues surged, but room rates also rose.

Hypothesizing that a new lodging tax would lead to competitive disadvantage of a hotel group against other adjacent groups unaffected by tax, Lee (2014) examined the effect of a lodging tax on hotel performance in the Midland–Odessa lodging market. Using a random effects spatial model, Lee found significant evidence of competitive disadvantage created by the adoption of the lodging tax (and thus higher prices) for Midlands hotels. Hotels in the Midlands performed worse on average than the hotels in Odessa after introduction of the new hotel occupancy tax (HOT). Collins and Stephenson (2018) similarly found a negative impact on room rates after an increase in hotel room tax. They analyzed the effect of a US\$5 lodging tax imposed in Georgia in 2015 using monthly hotel occupancy and price data from 50 states. The results indicated that the tax reduced the number of rooms rented in Georgia by about 92,000 per month and that hotel operators were not able to fully shift the tax to travelers.

Despite the evidence above, few empirical studies have attempted to provide a scientific assessment quantifying the impact of increasing lodging tax. In fact, there are some that suggest that if the revenues from increased lodging taxes are spent wisely, it can actually result in a boost to tourism and economic development (Anderson, 2015). Bonham et al. (1992) employed interrupted time series analysis to estimate *ex post* the impact of a hotel room tax increase in Hawaii on real net hotel revenues by analyzing that time series before and after the imposition of the tax. They found that tax had a negligible effect on real hotel revenues, suggesting that this was because a 5% increase in lodging expenditures represents less than 1.5% of the total cost of a typical vacation in Hawaii.

Other studies have estimated that if 2% were added to existing lodging tax rates, it would result in a reduction in room sales and associated visitor spending of between 2% and 5% (AHLEF, 2008; American Economics Group, 1998; TACIR, 2016). The American Hotel Foundation study of 1998 suggested that such a tax increase would raise an additional US\$1208.5 million from hotel guests but cause the loss of US\$1488.7 million in other state and local taxes paid by all industries and workers affected by reduced visitor spending. The net results would be a US\$280.2 million loss in combined sales and local tax collections. A study conducted by American Hotel & Lodging Educational Foundation (AHLEF) in 2008 suggested a similar increase in lodging tax (e.g. from

12.6% to 14.6%) would mean a reduction in jobs of 327,000 and a decrease in state and local taxes of US\$1212 million, offsetting the US\$2591 million in room taxes, for a net of US\$1379 million, about one-half of the added revenue expected from the room tax alone.

## Objectives

Clearly the research on the implementation of a lodging tax is still maturing and worthy of further study (Cetin et al., 2017), and there continues to be much controversy and confusion related to the imposition of such taxes (Nemerofsky, 2001). The key objective of this study therefore was to extend this line of research and determine the impact of hotel tax increase on certain cities that raised their lodging tax “too high.” The proposed hypothesis is that when a city’s hotel tax greatly increases above that of an easily accessible competitor, it will result in an economic loss to the city with the disproportionate tax rates.

## Methodology

The study utilized a mixed-method research approach, which included in-depth qualitative interviews and secondary data collected as factual industry statistics. Qualitative research has been recognized to have incomparable advantages to provide in-depth, rich information. As noted by Walsh (2003), “A good way to explore the full dimension of a problem is to examine it first hand, with field-based, qualitative research...” (Walsh, 2003: 66). In addition, the mixed method approach has received increased attention in the past decade, and research that utilizes more mixed method designs and multiple diverse data analysis is considered high quality (Yoo et al., 2011).

The focus of this study was cities/states that have increased their lodging taxes disproportionately (compared to competitors), and after consultation with the American Hotel & Lodging Association, seven cities and one state were chosen to study: Chicago, IL, Atlanta, GA, Huntsville, AL, Riverside, CA, El Paso, TX, Cincinnati, OH, Gilbert, AZ, and the state of Maine. Data were collected in two ways. Firstly, members of the research team traveled to each of the eight destinations to conduct in-depth interviews with various stakeholders such as hotel managers, destination marketing organizations (DMOs), key persons in hospitality and tourism organizations, and so on. An effort was made by the research team to interview a cross section of stakeholders in each destination. For example, in Maine, the six interviewees were from a Tourism Association, an Innkeepers Association, a Hotel, a Bed & Breakfast, and a Convention & Visitor’s Bureau. A snowballing technique was employed for each chosen city/state, whereby research participants were asked to recommend other participants for the study, based on their expertise regarding lodging tax in that destination.

The same questions were asked in each destination. Respondents were asked for example:

1. What is the hotel lodging tax in your city/destination, and what is the money used for (i.e. is it used to promote tourism or to build facilities or for general funding?)
2. Is the tax high compared to your competitors?
3. When lodging tax is increased here, do you think that increase is passed on to the visitor, or do hotels keep room rates the same to remain competitive?

4. Do you think the tax deters some visitors (e.g. leisure or big groups/meetings) from coming here? If so, is there any evidence for this?
5. Alternatively, do you think the tax increases make travelers change their plans by staying in less-expensive hotels or spending less in restaurants etc.?

In addition to the in-depth interviews, for each destination the research team collected the monthly average daily rate (ADR), occupancy, revenue per available room (RevPAR), room supply, and room demand 2 years before the increase and 2 years after, and the statistics from those of competitors (for each destination at least three competitors were identified by stakeholders in the interviews). The secondary data were obtained from Smith Travel Research (STR), a company that tracks supply and demand data for the hotel industry. To control the potential influence of the overall economic environment on hotel revenues, the quantitative analysis employed monthly data from 2010 to 2015 for all destinations. If a destination increased the tax twice during this period, only time series before and after the first increase was analyzed in the quantitative models. The tax increase (*TAX*) was coded as 0 if the month was before the tax increase, while it is coded as 1 if the month was during or after the tax increase. Seasonality was also taken into account due to its ability to cause volatility for hotel demand and revenue (Ampountolas, 2018). Competitors' average hotel rate (*COMPSET*) was measured by averaged ADR of the competitive destinations. All continuous variables were taken natural logarithm before building statistical models. To account for the dynamic interrelationships between these variables, the current study employed the vector autoregressive (VAR) model and vector error correction model (VECM). For model selection, the ADF unit root test was performed to check whether the variables were stationary (Dickey and Fuller, 1979). VAR model was selected if all variables were stationary. If not, Phillips and Ouliaris cointegration test was further conducted (Phillips and Ouliaris, 1990). VECM was selected if cointegration existed. If not, all variables were taken differences and the process was repeated.

On this basis, the models investigated how increases in lodging tax affect occupancy (model 1), ADR (model 2), and RevPAR (model 3) using monthly data from the STR database. The models accounted for the seasonality factor as well as the endogenous relationships between supply, demand, and other related variables.

$$\begin{bmatrix} OCCUPANCY_t \\ SUPPLY_t \\ DEMAND_t \end{bmatrix} = \begin{bmatrix} \pi_{11}^1 & \pi_{12}^1 & \pi_{13}^1 \\ \pi_{21}^1 & \pi_{22}^1 & \pi_{23}^1 \\ \pi_{31}^1 & \pi_{32}^1 & \pi_{33}^1 \end{bmatrix} \begin{bmatrix} OCCUPANCY_{t-1} \\ SUPPLY_{t-1} \\ DEMAND_{t-1} \end{bmatrix} + TAX + SEASONALITY + \begin{bmatrix} u_{OCCUPANCY,t} \\ u_{SUPPLY,t} \\ u_{DEMAND,t} \end{bmatrix} \tag{1}$$

$$\begin{bmatrix} ADR_t \\ SUPPLY_t \\ DEMAND_t \end{bmatrix} = \begin{bmatrix} \pi_{11}^1 & \pi_{12}^1 & \pi_{13}^1 \\ \pi_{21}^1 & \pi_{22}^1 & \pi_{23}^1 \\ \pi_{31}^1 & \pi_{32}^1 & \pi_{33}^1 \end{bmatrix} \begin{bmatrix} ADR_{t-1} \\ SUPPLY_{t-1} \\ DEMAND_{t-1} \end{bmatrix} + TAX + SEASONALITY + \begin{bmatrix} u_{ADR,t} \\ u_{SUPPLY,t} \\ u_{DEMAND,t} \end{bmatrix} \tag{2}$$

$$\begin{bmatrix} REVPAR_t \\ SUPPLY_t \\ DEMAND_t \end{bmatrix} = \begin{bmatrix} \pi_{11}^1 & \pi_{12}^1 & \pi_{13}^1 \\ \pi_{21}^1 & \pi_{22}^1 & \pi_{23}^1 \\ \pi_{31}^1 & \pi_{32}^1 & \pi_{33}^1 \end{bmatrix} \begin{bmatrix} REVPAR_{t-1} \\ SUPPLY_{t-1} \\ DEMAND_{t-1} \end{bmatrix} + TAX + SEASONALITY + \begin{bmatrix} u_{REVPAR,t} \\ u_{SUPPLY,t} \\ u_{DEMAND,t} \end{bmatrix} \tag{3}$$

where *t* refers to the time.

When the hotel rates of competitors are considered in the analysis, results provide additional insights into the impact of lodging tax increases for each destination. In the following time series models (models 4–6), competitors' average hotel rate (ADR of the competitor set) has been included in the models to account for the interaction among hotel revenue indicators of the destination and hotel rate of its competitors. In addition, the destination's supply data have been dropped from the model due to limited degree of freedom and relative stability of the supply.

$$\begin{bmatrix} OCCUPANCY_t \\ COMPSET_t \\ DEMAND_t \end{bmatrix} = \begin{bmatrix} \pi_{11}^1 & \pi_{12}^1 & \pi_{13}^1 \\ \pi_{21}^1 & \pi_{22}^1 & \pi_{23}^1 \\ \pi_{31}^1 & \pi_{32}^1 & \pi_{33}^1 \end{bmatrix} \begin{bmatrix} OCCUPANCY_{t-1} \\ COMPSET_{t-1} \\ DEMAND_{t-1} \end{bmatrix} + TAX + SEASONALITY + \begin{bmatrix} u_{OCCUPANCY,t} \\ u_{COMPSET,t} \\ u_{DEMAND,t} \end{bmatrix} \quad (4)$$

$$\begin{bmatrix} ADR_t \\ COMPSET_t \\ DEMAND_t \end{bmatrix} = \begin{bmatrix} \pi_{11}^1 & \pi_{12}^1 & \pi_{13}^1 \\ \pi_{21}^1 & \pi_{22}^1 & \pi_{23}^1 \\ \pi_{31}^1 & \pi_{32}^1 & \pi_{33}^1 \end{bmatrix} \begin{bmatrix} ADR_{t-1} \\ COMPSET_{t-1} \\ DEMAND_{t-1} \end{bmatrix} + TAX + SEASONALITY + \begin{bmatrix} u_{ADR,t} \\ u_{COMPSET,t} \\ u_{DEMAND,t} \end{bmatrix} \quad (5)$$

$$\begin{bmatrix} REVPAR_t \\ COMPSET_t \\ DEMAND_t \end{bmatrix} = \begin{bmatrix} \pi_{11}^1 & \pi_{12}^1 & \pi_{13}^1 \\ \pi_{21}^1 & \pi_{22}^1 & \pi_{23}^1 \\ \pi_{31}^1 & \pi_{32}^1 & \pi_{33}^1 \end{bmatrix} \begin{bmatrix} REVPAR_{t-1} \\ COMPSET_{t-1} \\ DEMAND_{t-1} \end{bmatrix} + TAX + SEASONALITY + \begin{bmatrix} u_{REVPAR,t} \\ u_{COMPSET,t} \\ u_{DEMAND,t} \end{bmatrix} \quad (6)$$

where  $t$  refers to the time.

## Results

### Case studies

In total, 27 in-depth interviews were conducted in the eight destinations, and the following section summarizes the responses for each destination with respect to the five key questions referred to above. Maine's current tax rate on lodging is currently 9% and the state saw two increases between 2013 and 2018. Most of the tax goes back to the general fund, but 5% goes to the main office of tourism where it is invested in tourism marketing. Some stakeholders we spoke to believe that this funding model helps Maine and that marketing dollars raised are spent wisely to bring in more tourists. However, others said that more of the tax should go into marketing, and one interviewee said that most hoteliers are against the lodging tax going up. "It is a fairly contentious issue in the state and it's something that always comes up."

Maine keeps an eye on competitors and their tax rates, with New Hampshire, Vermont, and Massachusetts perceived as the closest competitors: "We are sensitive to what it is in the rest of the states," said one. Another said that cities like Portland can absorb a tax increase whereas accommodations in more rural areas cannot:

It really depends on where you are. When the rate went up to 9% people around the Sebago Lake region complained—many have a \$99 rate inclusive and now the tax goes up by 1 point and they don't feel they can go beyond that amount. They ended up absorbing the increase.

All interviewees in Maine agreed that tour groups are more sensitive to tax increases. "The motor coach industry is important for us, and there's some fear that a couple of percent could matter their bottom line, because they've run pretty razor-thin margins in that industry" said one.

Leisure travelers in Maine seem less sensitive but this depends on the state of the economy. “Back in 2009 there was certainly some sensitivity in the marketplace.” Interviewees tended to agree that usually a tax increase won’t deter visitors from coming but they might change their spending patterns. One couple who own a B&B in Maine said that only previous guests seemed to notice the change when taxes are increased, although they are hoping it doesn’t increase again. They said that when it does increase, they pass it on to the visitor, and sometimes tourists will change their travel behavior because of the increase: “Some will reserve a cheaper room, and yes, will opt to save costs in other ways.”

Chicago’s current tax rate on lodging is 17.4% with the city having seen two increases in the last 6 years. The most recent 1% increase in 2016 generated US\$474 million of extra income yearly, which was earmarked largely for government worker pension costs. All interviewees in Chicago were concerned that Chicago has the highest tax among big cities, with some concerned as to how the tax was spent. “The tax is not coming back to tourism – it is being used to pay pension obligations, which have nothing to do with tourism. We are the agency that’s generating the heads in beds, bringing people in but we were not receiving the benefit right now.” However, there was a consensus that visitors, particularly business travelers, were not deterred by the high room tax: “The overall economic situation plays a more important role,” said one.

Convention attendees and association members are less price sensitive as they need to travel to Chicago for business, especially international guests who pay for a total package rate so they just pay it and probably don’t know what taxes are like.”

Because the tax is something that hotels cannot control, their coping strategy is to “just make sure that the consumer is educated, to make sure on the billing that the taxes are clear. The consumer understands that hotels have control over the rates but not the taxes.”

In Cincinnati, the lodging tax increased in 2013 from 8.27% to 11.77%. The hotel tax from visitors helped cover the construction debt of Cincinnati’s Duke Energy Convention Center and the Sharonville Convention Center, and it currently infuses cash into marketing campaigns designed to drum up tourism and convention business. The Cincinnati USA Convention and Visitors Bureau uses some of its share of the tax to travel to trade shows and other events to promote the region. Interviewees in Cincinnati had different opinions on the impact of lodging tax. A few said the tax made no difference: “If they want to come to Cincinnati, they will come regardless there’s a tax increase or not.” In addition, hotel rate, rather than the taxes, seems more important to managers rather than the taxes, as hotels adjust rates based on demands and “the tax just passes straight to the guest” after the fact. However, others believe that high tax rates could influence consumer decisions and viewed northern Kentucky as a threat due to its low tax rate and funding model of its convention center.

What most people on the internet do is that they don’t ever pick the first thing they look at—when they start comparing hotel to hotel, they’ll see which total price is lower and they’ll probably take that one.

One stakeholder was concerned about how the tax is spent: “We need to ensure the dollars are going towards to inbound tourist and conventions, not locals who want to go to a soccer game.”

Riverside, California increased its lodging taxes from 11% to 13% between 2012 and 2014 to increase tourism funding and promote the destination. The city also planned on using the money to help repair aging buildings and replace city assets. Interviewees were generally not opposed

to raising lodging tax as long as it generated more revenue for the Convention and Visitors Bureau (CVB) and results in more demand for the area. One said: “The only disagreement we would have is if our customers were to react negatively to any increase. Some people are concerned that businesses travel may be impacted.” Another said: “I think again the majority of our guests are from California. So they expect the taxes to be high.” One stakeholder interviewee suggested that having a lower lodging tax does not necessarily provide a competitive advantage:

If someone really wants to go to a destination type city like San Francisco or San Diego that has everything that those cities have to offer, they’re going to be paying way more money—double maybe triple maybe quadruple what they are paying here. So the tax isn’t really an issue, it is just an afterthought.

In El Paso, Texas, revenues from the state HOT go mostly to the state, with a small portion used to promote Texas. Local HOT revenues must be used to “directly enhance and promote tourism and the convention and hotel industry.” In 2012, El Paso increased the city’s HOT rate from 15.5% to 17.5% to support the funding of a new downtown baseball stadium. This made El Paso’s occupancy tax the highest in the state of Texas. All interviewees were quite supportive of the taxes because the money goes back into travel and tourism: “They cannot use the money to pay for roads—it has to be used to promote travel and tourism, to promote meetings or conventions, to build and maintain facilities related to these.” All interviewees in El Paso said that they had not heard of anyone who has cited the tax rate as a reason for not choosing El Paso for a meeting or a convention: “We can compete because our hotel rates are so much lower,” said one. Another suggested that meeting planners were more interested in meeting space and attractions and other available things on offer, as opposed to tax rates:

Looking at what incentives are going to be provided, that this is what they’re interested in. We will probably see on average for meeting convention the convention rate somewhere in the \$162 to \$185 range. And that’s still probably a hundred dollars less than what you will get in Dallas, Austin and Houston.

Gilbert, Arizona, increased its lodging taxes in 2013 from 8.27% to 11.77%. The city unanimously voted to modify the lodging tax and use the proceeds collected from the increase to support general operations of the city. The issues of tax have long been a topic of discussion, and at the time, some area hotel owners and managers expressed concerns with the increase, suggesting that raising the lodging tax would cause them to lose revenue. But one interviewee acknowledged that Gilbert has always had a very low bed tax, and their low room rates compared to competitors tend to attract some tourists: “We are definitely getting a share of folks who are looking for lower rates in places to stay.” As with other destinations, stakeholders were more concerned with how the tax was spent as opposed to its level. One interviewee from the local DMO said that hoteliers in Gilbert are interested in seeing that the money from lodging tax goes toward the identity of the destination: “They want us to drive demand. That’s going to benefit them indirectly.”

In 2017, Huntsville city officials agreed to increase the lodging tax from 13% to 15%—and double the hotel surcharge from US\$1 to US\$2—to generate revenue for a US\$42 million expansion to the Von Braun Center. The interviewees did not think the tax was high compared to these competitors. One said: “It is about along the same line. I don’t know the exact tax rate but I



think it is pretty comparable.” The interviewees overall did not feel that the tax increases would make travelers change their travel plans, one said:

I think probably most travelers, if its business travelers, the company pays for them. As far as families, they look at how much things cost. But I don't think that keeps anybody from coming or have a profound impact. It could have an impact, but I think it is mostly a negligible impact.

Another said: “I don't know if someone would go 25 miles away from here in order to pay 2% less or whatever the number may be. So I don't think the number is extremely high.” The room rates did not seem to be affected by the tax increase.

It does not affect the rate basically it does not affect our rate, as far as the lodging tax, we do not increase the rate just because the tax increases, the price is based on supply and demand and is not affected by the lodging tax. I don't feel the other hotels in the market will increase the rate due to the increase of the tax rate, either.

Atlanta's hotel tax is currently 16.9% (sales tax 8.9% and occupancy 8%) plus a State Hotel Assessment Fee of US\$5 per room/per night. Interviewees did not feel tax was high compared to those of the competing cities, one said: “I would say low or similar.” Again, interviewees did not feel that the tax deters some visitors (e.g. big groups/meetings) from visiting the destination. One said:

No—to my own surprise, I think the tax rates in Atlanta have actually helped the tourism. Because compared to other cities it is pretty low . . . In my years of experiences, I've never actually lost a group because of the tax percentage.

The interviewees overall did not think the tax increases would make travelers change their plan. One said:

People are financially cost-conscious with the dollars . . . But it is not related to tax. Other factors could be affecting people's expenditures. In my experiences, there are always other factors. I think most of people don't even think about the tax in order to make decisions. They don't know the percentage, and what they fees are when they are paying the bill.

### ***Analysis of occupancy levels, ADR, and RevPAR***

Initially, the occupancy levels, ADR, and RevPAR for each city were analyzed relative to competitors over a 5-year period (2 years before the increase and 2 years after). For four of the cities – Chicago, Atlanta, El Paso, and Cincinnati – the tax increase appears to have had no significant impact on these indices relative to competitors. For Gilbert, RevPAR was impacted slightly compared to competitors, and in Riverside, although occupancy levels caught up with competitors, RevPAR went from 7% lower than competitors to 18% lower after the tax increase. The two places where there appears to be an impact are Maine and Huntsville. In the 2 years following the tax increase, hotels in Maine lost ground slightly both in occupancy levels and ADR and lost ground significantly in RevPAR which went from US\$63 versus US\$93 to US\$68 versus US\$109. In Huntsville, ADR went from 27% lower than competitors to 40% lower, and RevPAR went from 45% lower than competitors to 58% lower in the 2 years following the tax increase. However, this

**Table 1.** Coefficients estimates of impacts of lodging tax increases on occupancy, ADR, and RevPAR.

City/State	Occupancy	ADR	RevPAR
Maine	0.0909 (0.8769)	0.0120 (0.0769*)	0.0262 (0.1285)
Chicago, IL	2.6120 (0.0032***)	0.0590 (0.0020***)	0.1081 (0.0007***)
Atlanta, GA	0.3908 (0.7139)	0.0404 (0.0069***)	0.0168 (0.3638)
Huntsville, AL	-0.8374 (0.3739)	0.0044 (0.2948)	0.0124 (0.5117)
Riverside, CA	-1.4102 (0.1827)	0.0038 (0.2204)	0.0442 (0.0106**)
El Paso, TX	-0.6134 (0.4570)	0.0076 (0.1593)	-0.0128 (0.7293)
Cincinnati, OH	1.2050 (0.1180)	0.0201 (0.0665*)	0.0392 (0.0570*)
Gilbert, AZ	1.0953 (0.8485)	0.0948 (0.0000***)	0.0106 (0.3435)

Note: ADR: average daily rate; RevPAR: revenue per available room. The *p* values are given in parentheses.

\*The coefficient is significant at the 10% level.

\*\*The coefficient is significant at the 5% level.

\*\*\*The coefficient is significant at the 1% level.

initial analysis fails to take into account other variables such as supply and demand, so time series models were applied for each destination.

Table 1 summarizes the impact of lodging tax increases on hotel revenue indicators for each destination. Results show that hotel rates (ADR) were significantly increased by the tax increases in Maine, Chicago, Atlanta, Cincinnati, and Gilbert. However, except for Chicago, occupancy was not affected by the lodging tax increases, which may be due to the dynamic process of the supply and demand equilibrium. Moreover, for Chicago, Riverside, and Cincinnati, RevPAR was significantly increased by the tax increases, possibly due to an increase of hotel rates or a decrease in hotel supply. As a result, although there were destinations where lodging tax increases bring little impacts (i.e. Huntsville and El Paso), results from this first time series analysis suggest that generally hotel prices were significantly increased by lodging tax increases and therefore the tax burden was passed on to the consumers.

Table 2 summarizes the impacts of lodging tax increases on hotel revenue indicators for each destination when considering hotel rates of the competitor set. Results show that competitors' hotel rates could positively affect the destinations' occupancy (i.e. Maine, Chicago, Atlanta, El Paso, Cincinnati, Gilbert, and Riverside), hotel rates (i.e. Chicago), and RevPAR (i.e. Maine, Atlanta, Riverside, and Cincinnati). Results also show that hotel pricing is generally increased by the lodging tax increases after considering competitors' impacts. Specifically, for Chicago, Huntsville, El Paso, and Cincinnati, hotel rates (ADR) were increased with the tax increases. In addition, for Riverside, Gilbert, and Chicago, hotel RevPARs were increased with tax increases, reflecting the increased hotel prices or increased demand over time. This second time series analysis also shows that there are some destinations where the hotel industry is hurt by the lodging tax increases. For example, in Huntsville, lodging tax increased the hotel rates and decreased the occupancy, leading to decreased RevPAR.

## Discussion

The key objective of this study was to determine the impact of raising the lodging tax "too high" can have on certain cities. The proposed hypothesis was that when a city's hotel tax greatly increases above that of an easily accessible competitor, it would result in an economic loss to the

**Table 2.** Coefficients estimates of impacts of lodging tax increases when considering competitors' hotel rates.

City/State	Occupancy	ADR	RevPAR
Maine	-0.9357 (0.1972)	0.0056 (0.4266)	0.0300 (0.1077)
Chicago, IL	-0.7172 (0.2611)	0.0376 (0.0358**)	0.0829 (0.0126***)
Atlanta, GA	0.2198 (0.8305)	0.0057 (0.4261)	0.0688 (0.1474)
Huntsville, AL	-3.3987 (0.0586*)	0.0165 (0.0441**)	-0.0429 (0.0621*)
Riverside, CA	-1.9470 (0.1197)	0.0040 (0.2109)	0.0302 (0.0688*)
El Paso, TX	-0.7342 (0.3531)	0.0137 (0.0605*)	0.0096 (0.5330)
Cincinnati, OH	-0.3805 (0.6046)	0.0180 (0.0842*)	0.0325 (0.1071)
Gilbert, AZ	5.6290 (0.2537)	0.0025 (0.6811)	0.2191 (0.0000***)

Note: ADR: average daily rate; RevPAR: revenue per available room. The *p* values are given in parentheses.

\*The coefficient is significant at the 10% level.

\*\*The coefficient is significant at the 5% level.

\*\*\*The coefficient is significant at the 1% level.

city with the disproportionate tax rates. Overall, data from both the interviews and from STR produced mixed findings and did not fully support this hypothesis. The STR data showed that hotels in one destination (Huntsville) were negatively impacted by increasing their lodging tax, and the interviews suggested that high lodging taxes have adversely affected boutique and smaller hotels in Atlanta, Maine, and Chicago. But on the other hand, hotels appear to have absorbed any tax increases with little impact to their businesses. At the same time, many industry stakeholders are certainly opposed to further increases. In Maine for example, the industry was strongly against a recent proposed increase of 1.5% and even caused a government shutdown over it. Also in Chicago, interviewees opposed the latest tax increase, annoyed particularly that the tax did not come back to tourism but was used instead to pay pension obligations.

As mentioned above, this last point about how the tax was spent seemed to be a recurring theme throughout the interviews, with most stakeholders objecting to lodging taxes that were used for purposes other than tourism promotion or support of convention centers. In Atlanta for example, the State Hotel Assessment Fee of US\$5 per room/per night was perceived as an unfair burden on the hospitality industry as the money was used for highway projects across the state. But even this extra assessment fee did not appear to have had a negative impact on occupancy in Georgia, and few interviewees could give examples of any negative impact of tax increases. However, there was a suggestion that tour groups were more sensitive to tax increases. In Maine, for example, there was a fear that a couple of percent could matter to the bottom line for the motor coach industry as they have such tight margins. But most interviewees agreed that meeting planners and business travelers were not impacted by tax increases and tended to absorb them without complaint.

The results of this study make several theoretical contributions to the literature. First, although the results do not provide support to the proposed hypothesis, it does provide significant findings related to the effects of lodging tax on tourism development and destination competitiveness. For each destination, they identify their competitors and keep an eye on their lodging tax rates. The results of qualitative and quantitative analysis indicate that lodging tax should compensate the sustainability of tourism development. Such findings are consistent with Cetin (2014) and Litvin et al. (2006) research.

Second, the qualitative studies show the important role of stakeholders in influencing the achievement of destination promotion and development. Such a finding is empirically supported by Sheehan and Ritchie's (2005) study. Among a wide range of stakeholders, the DMO, city, and hotels are the most important stakeholders. To better manage the process of tax implementation, the interests and input of these parties may need to be considered carefully.

Third, this study also extends existing understanding of the impacts of lodging tax on hotel and destination pricing strategy. Tax competition theory (Wilson, 1986) holds that the hotels may move to areas with lower tax to avoid high tax areas, while this study shows that if the tax funding is used to promote local tourism development, the benefits may outweigh disadvantages created in hotel price. The results also support the contention made previously in the literature that the allocation of funds created by tourism-related taxes should be spent wisely (Cetin et al., 2017). Otherwise, the use of tax funds by DMOs is becoming subject to scrutiny for their lack of efficiency and effectiveness in trip generation (Sheehan et al., 2007).

From a practical point of view, do all increases in lodging tax get passed on to the consumer? As mentioned in the introduction, depending on the elasticity of supply and demand for the room, hotel managers may not be able to increase rates by the full amount of the tax (Hazinski and Moon, 2016). Although in the interviews it was suggested that some lower priced hotels do not always increase the room rate just because the tax increases, the results of the time series models show that generally hotel prices are significantly increased by lodging tax increases and therefore the tax burden is passed on to the consumers.

In the introduction it was mentioned that US Travel's Travel Tax Institute found that in 2011, 49% of travelers had altered their plans due to higher lodging taxes, by staying at less-expensive hotels, spending less on shopping and entertainment, and visiting during the off-season. This study did find some evidence of this travel behavior in our interviews. In Maine for example, it was suggested that hotel visitors who were sensitive to a tax increase may select a cheaper room than previously, or not eat out as much, or chose a different style of restaurant. In Cincinnati, two hotel managers felt that tax rates do play a role in decision-making. As one said: "Maybe visitors were looking to stay for five nights, they see the tax and they may only stay three. So they either shorten their stay or shop somewhere else."

In Huntsville, one hotel owner thought that the leisure market might change their plans as they are more rate-conscious, whereas he said "group/corporate travelers are not really affected by the tax increase because they are not using their own money." Stakeholders in Riverside and Cincinnati agreed that if visitors "have" to come to the destination anyway, their decision will not be affected by lodging tax. And in El Paso and Gilbert, where room rates are often lower than competitors, it was suggested that any tax increase would have a marginal impact on consumers compared to competitors like Dallas where the room rates are much higher.

Finally, in the introduction it was suggested that if the revenues from increased lodging taxes are spent wisely, it can actually result in a boost to tourism and economic development. In general, this study found that if the tax was spent on tourism marketing, stakeholders seemed to be satisfied with how it was spent and with the resulting outcomes. Alabama's Tourism Director said his office's main interest when it comes to the lodging tax is to encourage cities to dedicate any tax increase to support either marketing their town or targeting any investment into infrastructure that will attract more visitors. Most respondents in Maine also support marketing dollars from lodging tax to be spent wisely to bring in more tourists, although most industry stakeholders there would like to see larger percentage of the funds spent on tourism marketing. And in Riverside and El Paso, stakeholders were not opposed to raising lodging taxes as long as they generated more

revenue for the CVB and resulted in more demand for the area. These findings were consistent with previous studies that tax is allocated to assist local tourism development (Spengler and Uysal, 1989).

In Huntsville, where the latest tax increase was used to generate revenue for a US\$42 million expansion to the convention center, there was general support for the increase because stakeholders believed the center is, and will continue to be, a major driver for tourism in the area. However, as the data show, the city has lost ground to competitors in the short term, so it would be interesting to monitor the situation there to see if in fact the tax increase has a positive long-term impact for the city.

## Conclusion

As US destinations compete both domestically and globally, an appropriate balance of lodging tax collection, destination promotion, and infrastructure must be obtained to optimize visitation. This study would suggest that the argument over “how much tax increase is too much?” should be more about “how the lodging tax is spent.” From the results (and from previous studies), it seems that if additional funds generated from lodging taxes are utilized to generate additional demand, a destination might benefit accordingly.

In addition, this study only focused on industry stakeholders and only analyzed hotel data in eight US destinations. While the current study extends the existing literature by exploring the impact of the hotel tax increase on certain cities at an aggregate level, future studies should investigate how hotel prices with tax increases affect tourists choices, perceived value, booking intentions, and actual booking behaviors. How sensitive are consumers to lodging tax increases? Conjoint analysis, a technique that asks respondents to make trade-offs between different groupings of attributes, could be employed with different types of hotel guests (and meeting planners) to determine how much is too much and how tax increases change travel behavior for various travel segments. Cetin et al. (2017) also argue that locals should also be questioned about their interests and opinions regarding the impact of lodging taxes.

Future research could also explore how lodging tax dollars are used to sustain a destination. As of late, there has been much discussion about “overtourism,” but although there are numerous studies on how tax dollars influence the success of destinations and hotel occupancy, there are very few research papers on optimal ways to invest tourism tax dollars in tourism-supporting infrastructure. In the future, researchers could look at what fair proportion of lodging taxes might be invested in local and regional sustainability and triple bottom line goals (Wood, 2017).


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