

# Clearing the Haze?

## New Evidence on the Economic Impact of Smoking Bans

By Michael R. Pakko

When making decisions about adopting smoke-free laws, advocates often give policymakers a Pollyannaish outlook in which communities can achieve public health benefits with no economic consequences. In particular, the lack of statistically significant economic effects is interpreted as indicating an absence of economic costs. Recent economic research indicates that this is a far too simplistic view of the issue.

A previous article in *The Regional Economist* (“Peering Through the Haze,” July 2005) described some early evidence on the economic impact of smoke-free laws and suggested that the findings were far from conclusive.<sup>1</sup>

As more communities have adopted smoke-free laws and more data have been gathered, economists have discovered new, significant findings. As an earlier article suggested, economic costs often focus on specific business categories—those that smokers tend to frequent.

### Gambling and Smoking

Several papers have examined the cost of smoke-free laws on the gambling business, using data from slot machine revenue at Delaware racetracks (“racinos”).<sup>2</sup> Recent economic research finds conclusive evidence of revenue declines at the racinos after the Delaware Clean Indoor Air Law took effect in December 2002.

In my recent research on the topic, I find statistically significant losses at all three Delaware racinos—ranging from 8.9 percent to 17.8 percent.<sup>3</sup> Overall, the statewide revenue

decline was 14.9 percent. Using slightly different methods that estimate demand for casino gambling, economists Richard Thalheimer and Mukhtar Ali estimate the total revenue loss at 15.9 percent.

These revenue estimates may significantly understate profit losses. For example, the racino that suffered the smallest loss in revenues—Dover Downs—also was the only one with a luxury hotel on site. Dover Downs management responded to initial revenue losses by offering more discounts on hotel rooms.<sup>4</sup> Efforts to prop up revenue may have been partly successful, but at a cost to the bottom line.

Evidence on the effect of smoking bans on gaming revenue shows that when analysis can be narrowly focused on data from specific businesses, statistically significant findings emerge. Another approach is to use very large data sets. As smoking bans have spread across the country, the variety and timing of adopting smoke-free laws have generated data that can help identify effects.

### Bar and Restaurant Employment

Two papers, one by Ryan Phelps and the other by Scott Adams and Chad Cotti, have used data available from the Bureau of Labor Statistics to examine the employment effects of smoking bans. Using nationwide county-level data, these two studies examine the changes in employment at bars and restaurants after communities adopt smoking bans. Neither study finds significant employment changes at restaurants, on average, but both find statistically significant employment declines at bars, with loss estimates ranging from 4 percent to 16 percent.

Adams and Cotti also examine some additional factors. For communities in states with

a higher ratio of smokers to nonsmokers than the national average, employment losses at bars were significantly larger, and the employment changes at restaurants went from a small positive effect to a small negative effect (in neither case, statistically significant). Climate also affected restaurant employment.<sup>5</sup> Restaurants in warm climates fared better than those in cooler climates. The authors suggest that the reason for this might be that restaurants in warmer climates can more easily provide outdoor seating where smoking is not prohibited. (See also the sidebar on Columbia, Mo.) Restaurants that suffered the dual curse of being in regions with colder climates *and* a high prevalence of smokers suffered statistically significant employment losses, on average.

### California Dreamin’

Another recent economic study examines taxable sales receipts of bars and restaurants in California, the home of the smoke-free movement. Because California communities passed some of the nation’s first smoke-free laws, much of the early evidence on the subject was based on these data on California taxable sales receipts; as time has passed, those data have accumulated. The experience of California also provides a case in which a statewide smoking ban was superimposed on a patchwork of local smoke-free laws, providing useful variation in the coverage and jurisdiction of smoking bans that can be exploited in empirical analysis.

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## District Focus: Smoking Ban Sings Columbia, Mo.

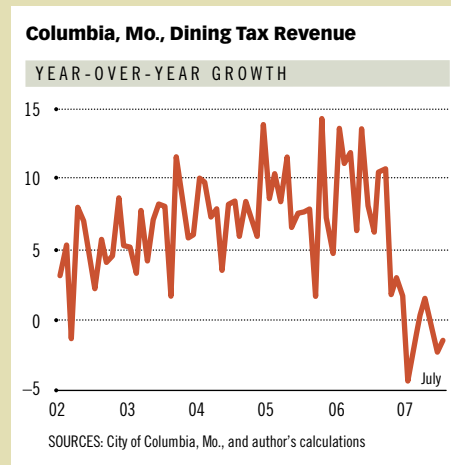
Since January 2007, all bars and restaurants in Columbia, Mo., have been required to be smoke-free. Only some sections of outdoor patios are exempt from the requirement.

Some local businesses have continued to oppose the Columbia Clean Air Ordinance, circulating petitions to repeal the law by ballot initiative. According to local press reports, owners of at least four establishments have cited the smoking ban as a factor in their decision to close their doors in 2007.

Recent data from the city of Columbia show a distinct decline in sales tax receipts at bars and restaurants. After rising at an average rate of 6.8 percent from 2002 through 2006, tax revenue declined at an annual rate of 1.3 percent over the first seven months of 2007. (See graph.) Although the data are still preliminary, initial analysis suggests a 5 percent decline in overall sales revenue at Columbia dining establishments since the implementation of the smoking ban. This estimate takes into account past trends, seasonal fluctuations in the data and an overall slowdown in sales tax revenue in Columbia.<sup>6</sup>

One interesting feature of the Columbia story is the response of restaurant owners to the patio

exemption. According to an article in the *Columbia Missourian*, owners of at least two bars are building or planning outdoor patio expansions. One owner was quoted as saying, "You have to have a patio to survive."<sup>7</sup> The expenses associated with these renovations may help buffer the sales revenue of these establishments, but they also represent profit losses that are above and beyond the measured sales declines.




Economists Robert Fleck and Andrew Hanssen analyzed quarterly restaurant sales data for 267 California cities over 25 years. They find that the measured impact of smoking bans differs between local bans and the statewide ban. In what the authors call their "naïve" specification that treats all smoke-free laws the same, they find a statistically significant 4 percent decline in revenues associated with smoking bans.

When they estimate the effects of the statewide ban and local bans independently, they find that the measured decline in restaurant sales is attributable to the statewide ban on cities without local bans. The measured effect of the statewide ban is nearly 4 percent, and it is statistically significant. The independent effect of local smoking ordinances is estimated to be very small and is not significant. These findings are consistent with the interpretation that locally originated smoking bans have little effect, but smoking bans that are imposed on a community by a higher jurisdiction can have a detrimental economic impact.

Fleck and Hanssen go on to uncover an important specification problem: They find

that cities that adopted smoke-free laws were systematically different from those that did not. The authors find that sales growth tends to be a predictor of smoking bans, rather than the other way around. This "reverse causality" calls into question many earlier findings, and it poses problems for using data from California in drawing inferences about the economic impact of smoking bans elsewhere.

### The Role of Economic Research

Economic effects of smoke-free laws may be difficult to identify and interpret, but analysis suggests that at least some businesses do suffer costs. When they consider passing smoking bans, policymakers should study evidence both from public health professionals and from economists. 

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## ENDNOTES

- <sup>1</sup> Scollo et al. (2003) provide a review of previous literature, much of which has been published in medical and public health journals.
- <sup>2</sup> Previous studies of the Delaware racino case study have been published—and disputed—in the public health journal *Tobacco Control*.
- <sup>3</sup> See Pakko (forthcoming).
- <sup>4</sup> See Dover Downs (2004).
- <sup>5</sup> Bar employment was not significantly affected by climate differences.
- <sup>6</sup> See Pakko (2007).
- <sup>7</sup> See Solberg (2007).

## REFERENCES

- Adams, Scott; and Cotti, Chad D. "The Effect of Smoking Bans on Bars and Restaurants: An Analysis of Changes in Employment." *The B.E. Journal of Economic Analysis & Policy*: Vol. 7, Issue 1, Contributions, Article 12. See [www.bepress.com/bejeap/vol7/iss1/art12](http://www.bepress.com/bejeap/vol7/iss1/art12).
- See Dover Downs Gaming and Entertainment Inc. *Annual Report for the Fiscal Year ended Dec. 31, 2003* (2004).
- Fleck, Robert K.; and Hanssen, F. Andrew. "Why Understanding Smoking Bans is Important for Estimating Their Effects: California's Restaurant Smoking Bans and Restaurant Sales." *Economic Inquiry* (forthcoming).
- Pakko, Michael R. "The Economics of Smoking Bans: Peering Through The Haze." *The Regional Economist*, Federal Reserve Bank of St. Louis, July 2005, pp. 12-13.
- Pakko, Michael R. "No Smoking at the Slot Machines: The Effect of Smoke-Free Laws on Gaming Revenues." *Applied Economics* (forthcoming).
- Pakko, Michael R. "The Economic Impact of a Smoking Ban in Columbia, Missouri: A Preliminary Analysis of Sales Tax Data." *CRE8 Occasional Report*, Dec. 11, 2007. See <http://research.stlouisfed.org/regions/op/CRE8OP-2007-002.pdf>.
- Phelps, Ryan. "The Economic Impact of 100% Smoking Bans." *Kentucky Annual Economic Report 2006*, Center for Business and Economic Research, Gatton College of Business and Economics, University of Kentucky, 2006, pp. 31-34.
- Thalheimer, Richard; and Ali, Mukhtar M. "The Demand for Casino Gaming with Special Reference to a Smoking Ban." *Economic Inquiry* (forthcoming).
- Scollo, M.; Lal, A.; Hyland, A.; and Glantz, S. "Review of the Quality of Studies on the Economic Effects of Smoke-free Policies on the Hospitality Industry." *Tobacco Control*, 2003, Vol. 12, pp. 13-20.
- Solberg, Christy. "Effects of Smoking Ban Still Debated." *Columbia Missourian*, Sept. 27, 2007. See [www.columbiainmissourian.com/stories/2007/09/27/effects-smoking-ban-still-debated/](http://www.columbiainmissourian.com/stories/2007/09/27/effects-smoking-ban-still-debated/).