

tobacconomics

Economic Research Informing Tobacco Control Policy

The Effect of the Smoke-Free Illinois Act on Casino Admissions and Revenue

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Society for Research on Nicotine & Tobacco

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Acknowledgements

Frank J. Chaloupka, UIC and NBER

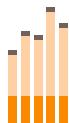
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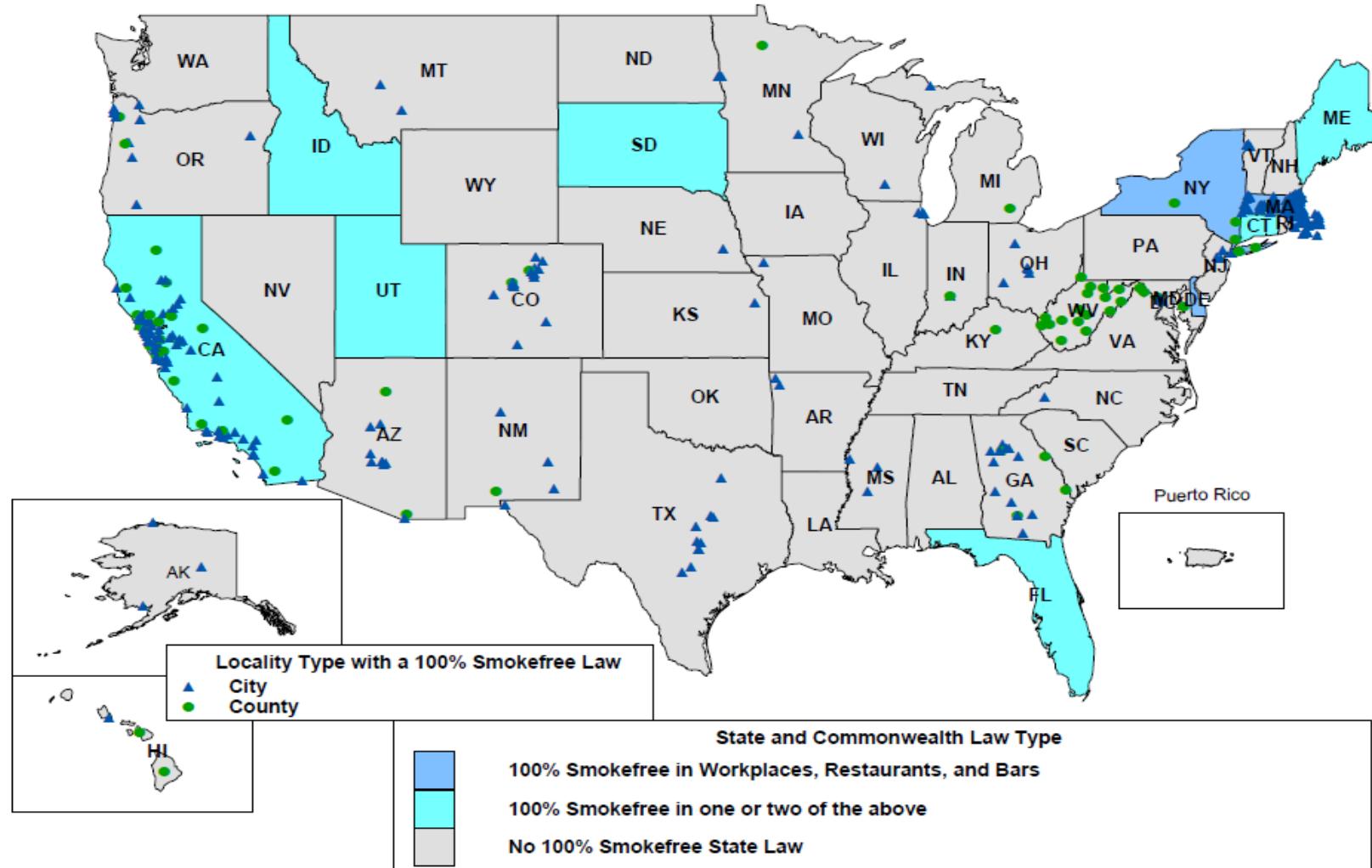


Smoke-Free Policies, 2005

United States 100% Smokefree Laws

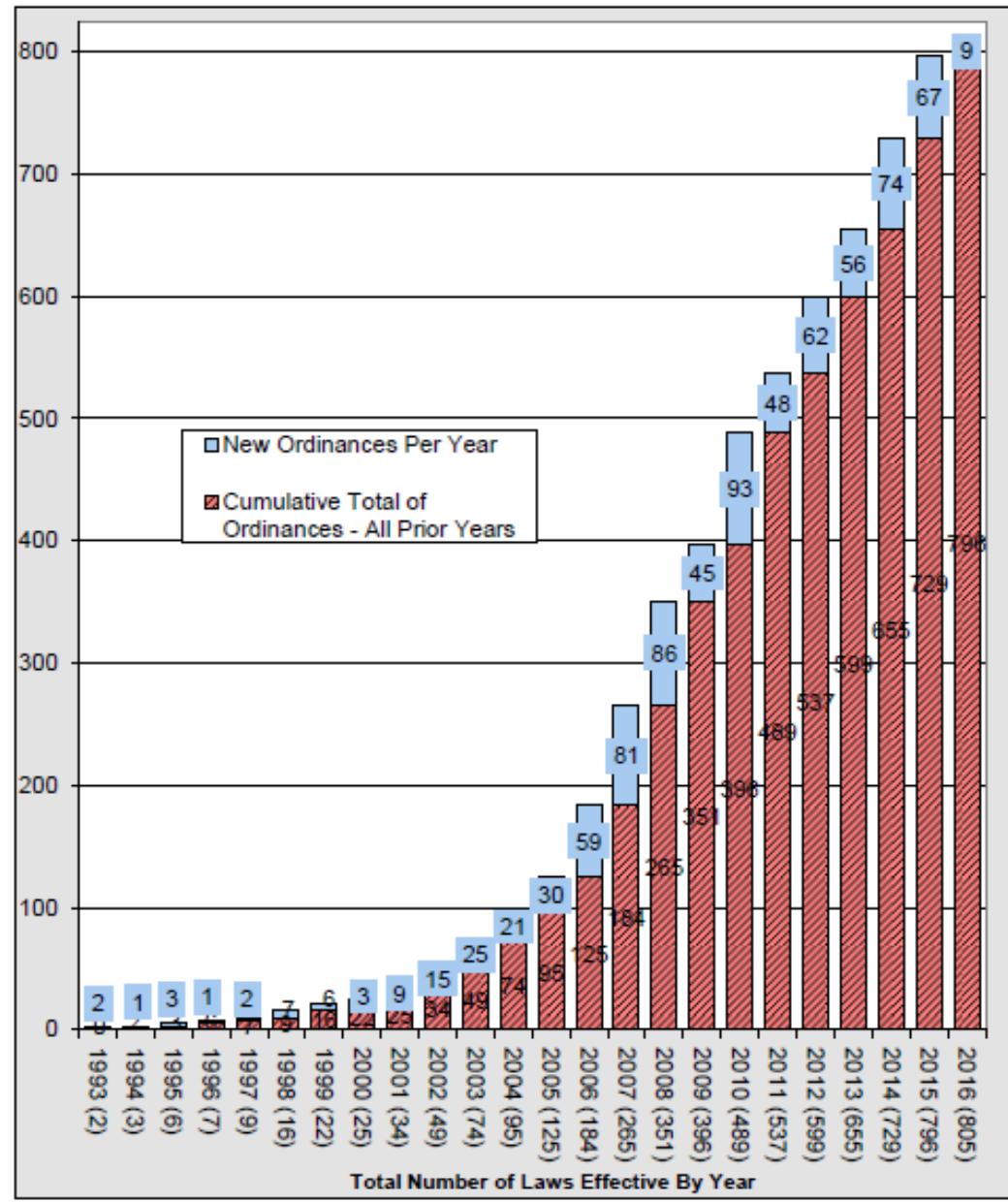
American Nonsmokers' Rights Foundation

As of January 1, 2005



Source: Americans for Nonsmokers' Rights Foundation

Local 100% Smokefree Laws in all Workplaces,* Restaurants, and Bars:**
Effective by Year
January 1, 2016



Source: ANRF (2016)

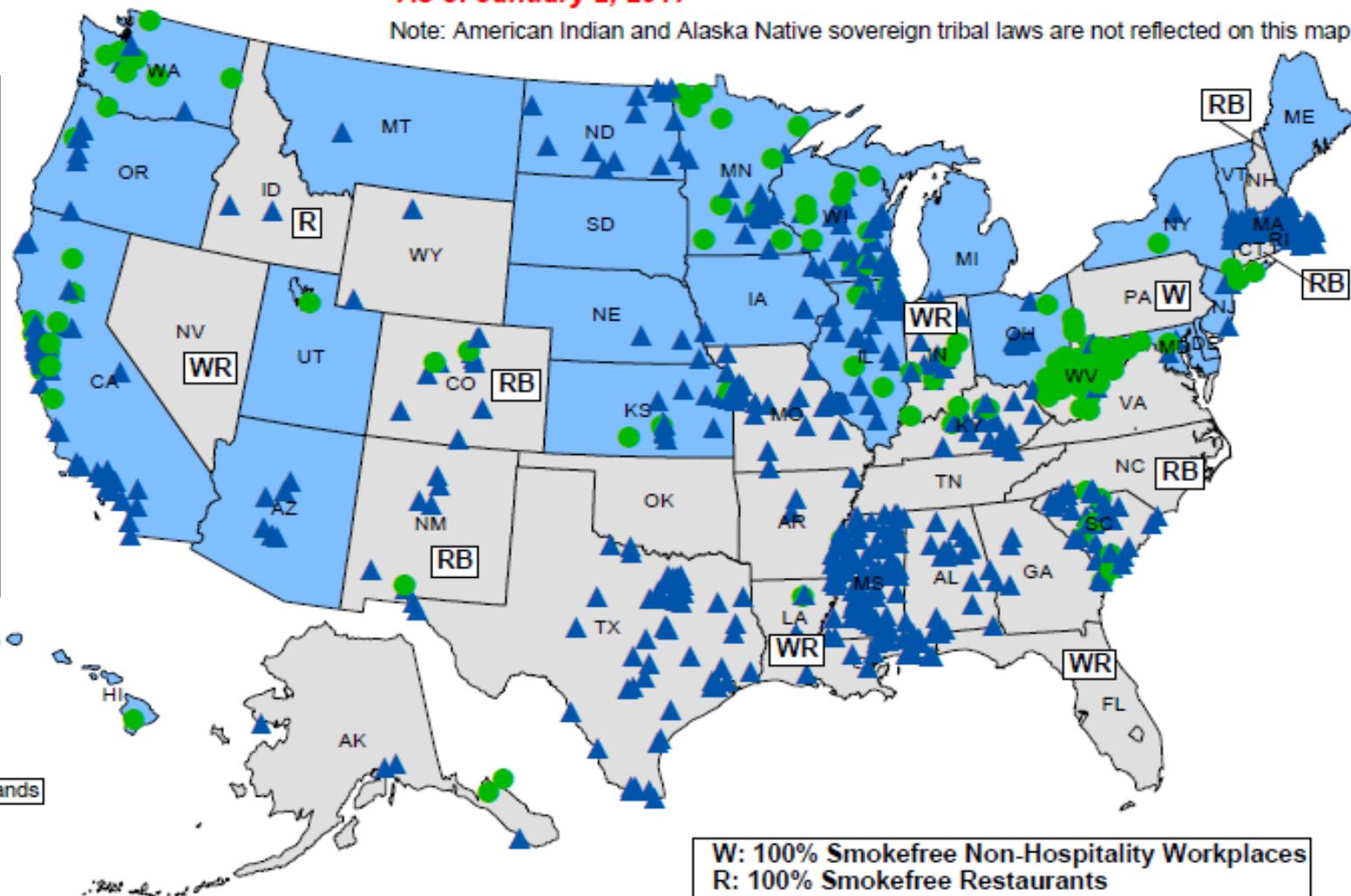
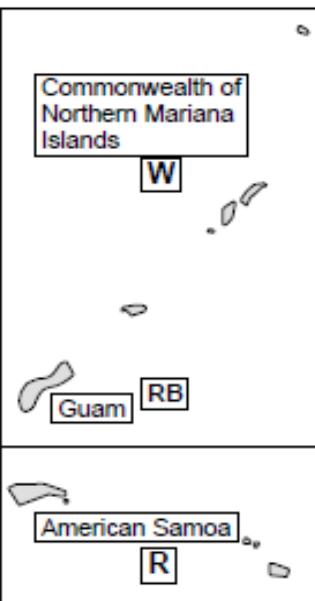
U.S. 100% Smokefree Laws in Non-Hospitality Workplaces AND Restaurants AND Bars

American Nonsmokers' Rights Foundation

As of January 2, 2017

Note: American Indian and Alaska Native sovereign tribal laws are not reflected on this map.

Territories and Commonwealths



W: 100% Smokefree Non-Hospitality Workplaces
R: 100% Smokefree Restaurants
B: 100% Smokefree Bars

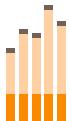
Locality Type with a 100% Smokefree WRB Law

- ▲ City
- County

	State and Commonwealth/Territory Law Type
	100% Smokefree Non-Hospitality Workplace, Restaurant, and Bar Law
	Law doesn't cover 100% Smokefree Non-Hosp. Workplaces & Restaurants & Bars

Smoke-free Casinos

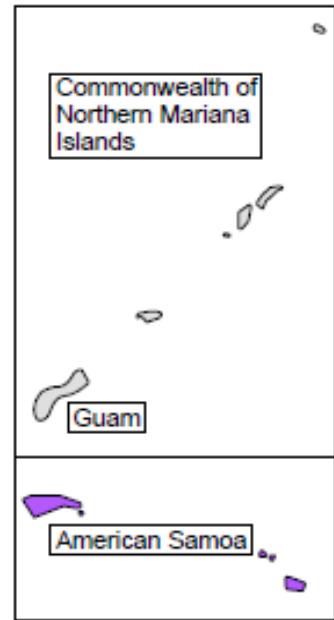
- Despite the proliferation of smoke-free air laws across the United States, many state laws have exemptions for smoking in casinos
- Casinos operated by Native American tribes on tribal lands are exempt from state smoke-free laws



U.S. 100% Smokefree Gambling

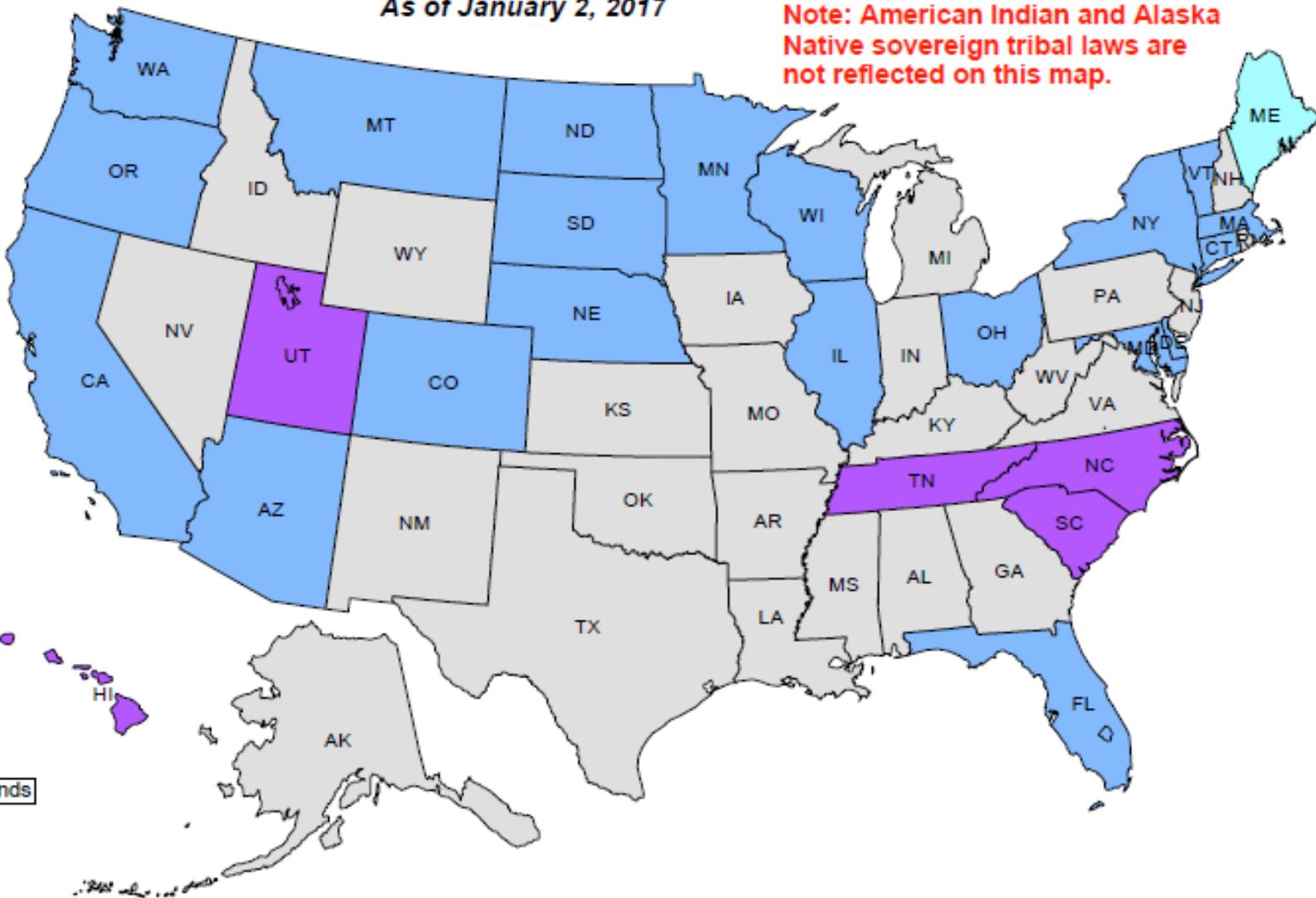
American Nonsmokers' Rights Foundation

Territories and Commonwealths



As of January 2, 2017

Note: American Indian and Alaska Native sovereign tribal laws are not reflected on this map.

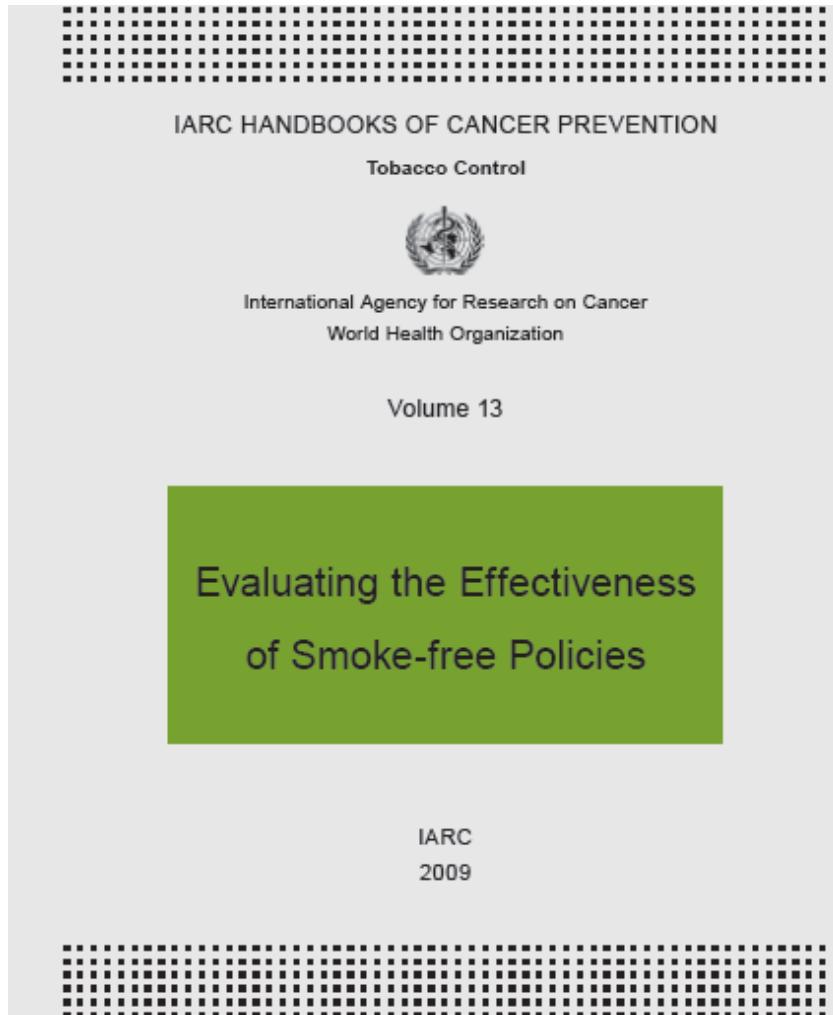


Note: WI and VT have laws that cover state-regulated gambling facilities, but neither state currently has any such facilities .

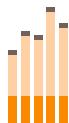
Gambling laws reflected on this map do not include bingo.

	State and Commonwealth/Territory Law Type
Blue	100% Smokefree in all State-Regulated Gambling
Light Gray	State-Regulated Gambling not 100% Smokefree
Cyan	State-Regulated Gambling Facilities opened in July 2003 or later 100% Smokefree
Purple	State-Regulated Gambling not permitted

Economic Impact of SFA Laws

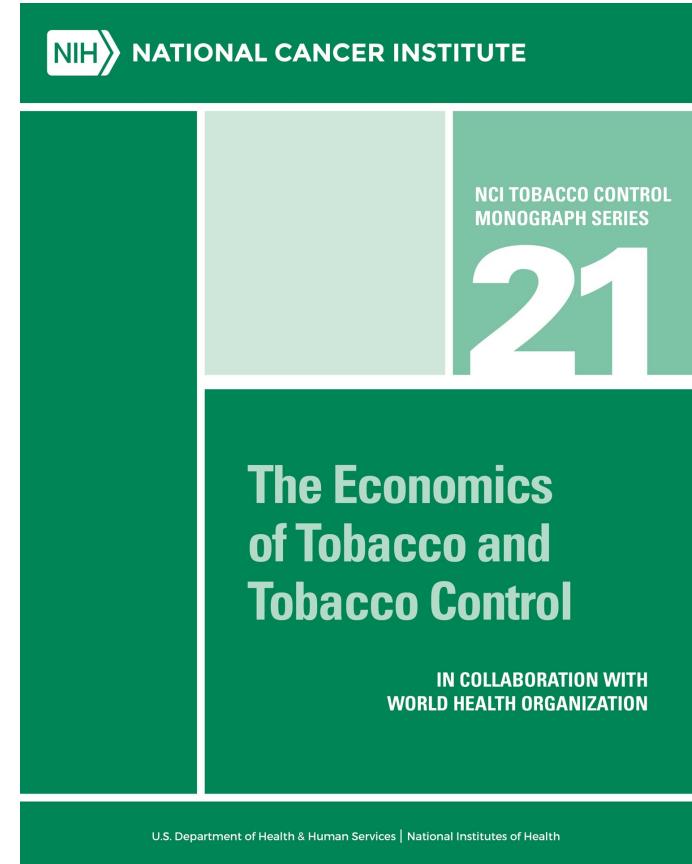
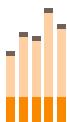


“Sufficient evidence
that smoke-free
policies do not cause a
decline in the business
activity of the
restaurant and bar
industry”



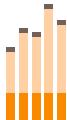
Economic Impact of SFA Laws

“Overall, rigorous empirical studies (largely from high-income countries) using objective economic indicators find that smoke-free policies do not have negative economic consequences for businesses, including restaurants and bars, with a small positive effect being observed in some cases. Findings from the limited existing research conducted in low- and middle-income countries are generally consistent with those from high-income countries.”



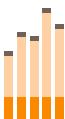
Arguments for and Against Banning Smoking in Casinos

- Opponents of smoke-free casinos argue that smoking and gambling go hand in hand and banning smoking in casinos will have detrimental effects on casino revenues and admissions
- Proponents of eliminating secondhand smoke exposure in casinos contend there will be no negative economic consequences of prohibiting smoking in casinos and significant improvements in the health of casino workers and patrons of casinos will ensue.



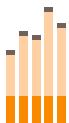
Economic Impact of SFA Casino Laws

- Mixed evidence on effect of smoke-free policies on casino revenues.
 - Mandel and colleagues (2005) and Glantz and Alamar (2005) concluded that there was no effect of Delaware's smoke-free policy on either total revenues or revenues per machine.
 - Pakko (2006) concluded that the Delaware's smoke-free policy reduced gaming revenues in Delaware by 13 percent.
 - Lal and Siahpush (2008) concluded that Victoria Australia's smoke-free policy reducing gaming revenues by about 14%.



Smoke-Free Illinois Act

- Implemented January 1, 2008
- Prohibits smoking in enclosed public places and places of employment and prohibits smoking within 15 feet of building entrances, exits, windows that open, and ventilation intakes
- As part of the Smoke-Free Illinois Act, smoking on the gambling floors of all commercial casinos in Illinois was prohibited



Smoke-Free Illinois Act

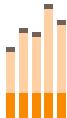
Year-old smoking ban still irks Illinois casinos, bars

January 02, 2009 at 5:00 am | By the Associated Press

“What is clear is that casino business is down since the ban started. Revenue at Illinois casinos dropped 20.2 percent between November 2007 and November 2008, according to the most recent figures available from the Illinois Gaming Board.

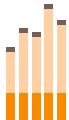
Several factors are to blame, among them the weak economy.

“But the majority of the decrease has been as a result of the smoking ban,” said Tom Swoik, executive director of the Illinois Casino Gaming Association.”

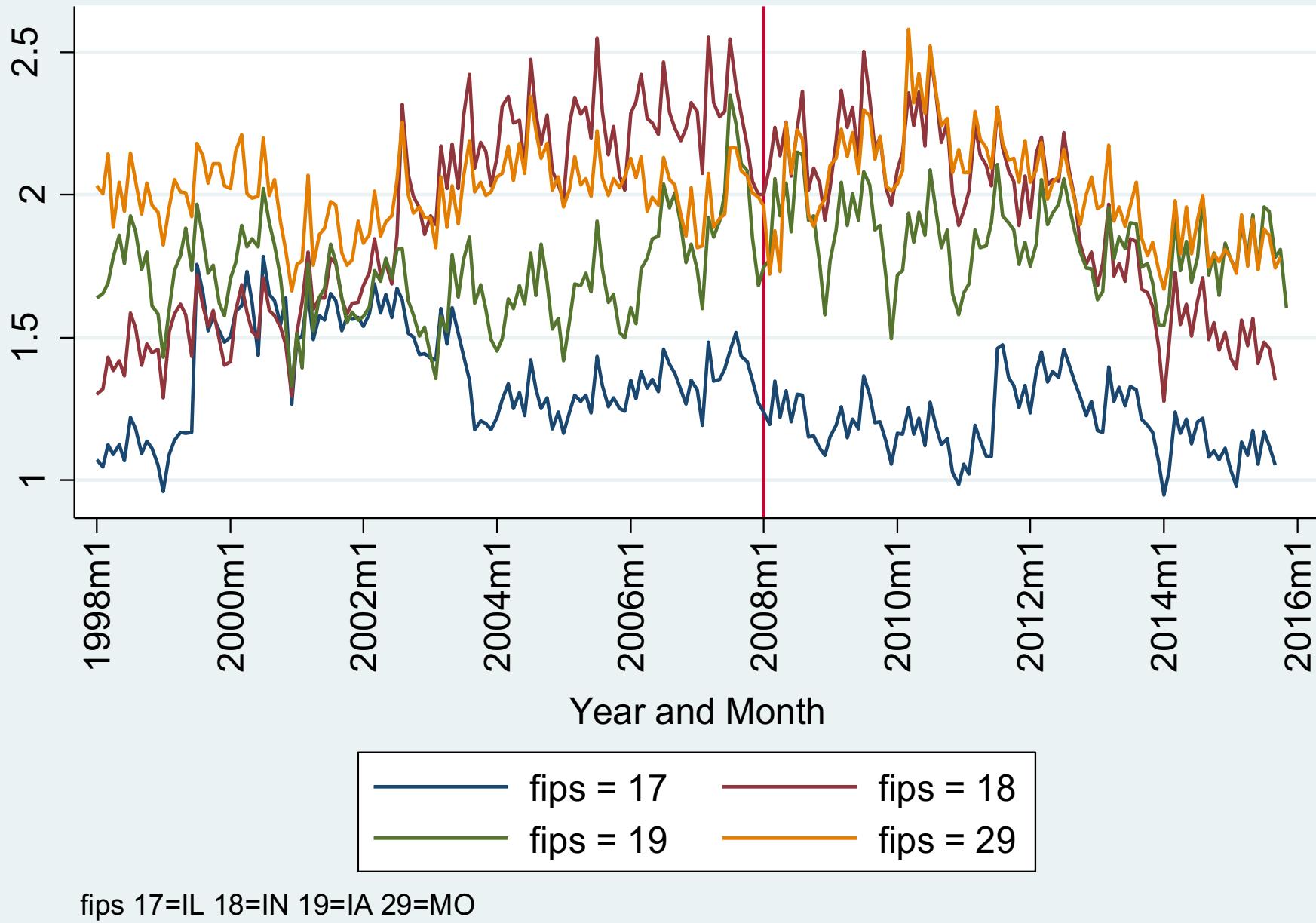


Data

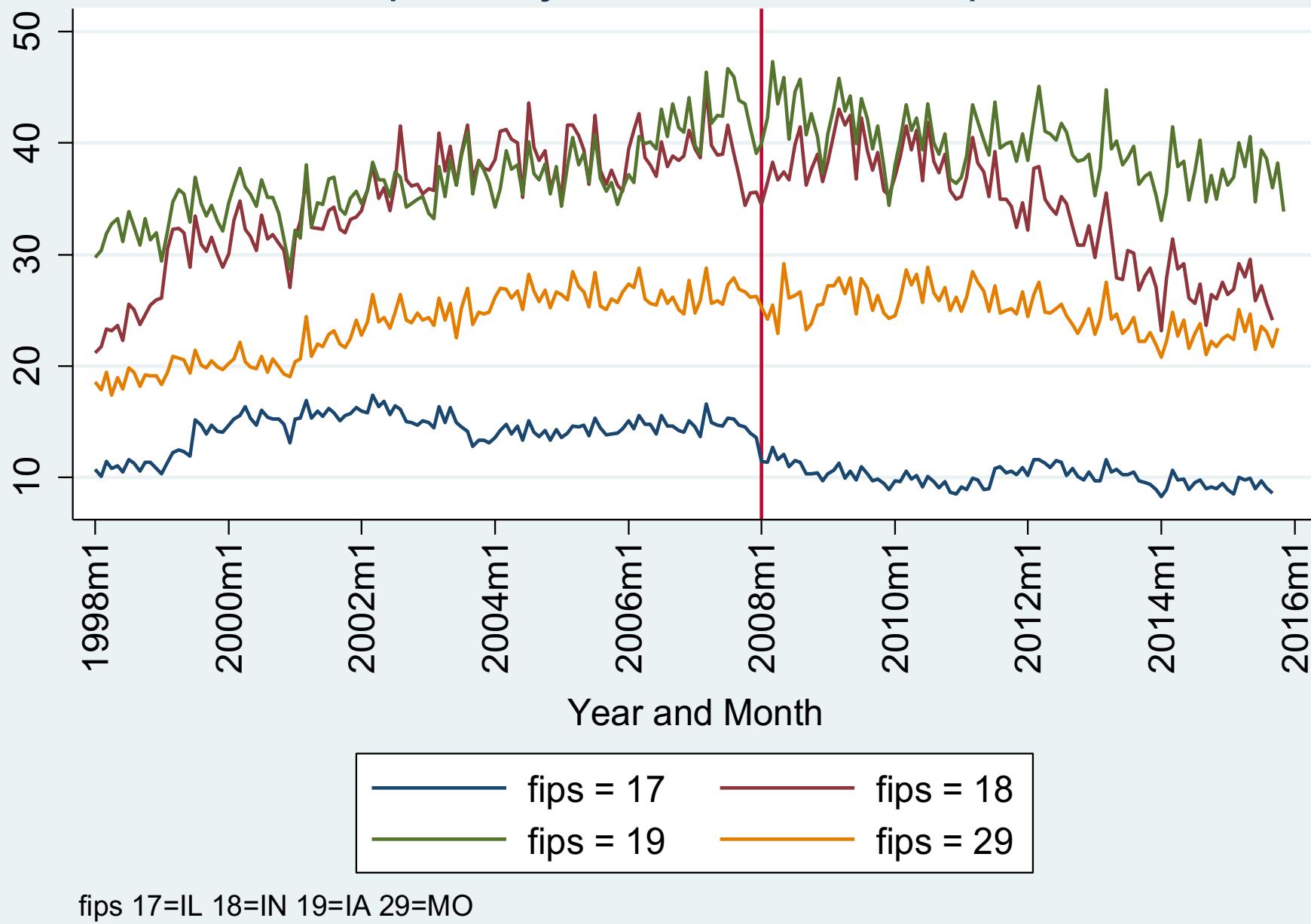
- Monthly gaming commission reports for Illinois, Indiana, Missouri, and Iowa for the period January 1998 – September 2015
- Specifically, we extracted monthly state-level data on:
 - casino adjusted gross receipts
 - admissions
 - number of table games
 - number of electronic gaming devices
 - number of casinos



Casino Admissions 1998-2015

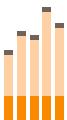


Real Per-Capita Adjusted Gross Receipts 1998-2015



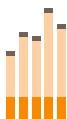
Dependent Variables

- Real per-capita gross adjusted receipts (AGR)
 - Dividing the AGR by linearly interpolated population estimates from the US Census
 - Deflating per-capita AGR by the monthly Consumer Price Index published by the Bureau of Labor Statistics (1982-1984 =100)
- Admissions per-capita
 - Dividing the absolute admissions by linearly interpolated population estimates from the US Census



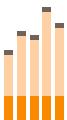
Key Independent Variable

- Dichotomous indicator equal to one for the state of Illinois starting January 1, 2008 and equal to zero otherwise
 - Specifically, the dichotomous indicator takes on a value equal to zero for the state of Illinois prior to January 1, takes on a value of 1 for the state of Illinois starting January 1, 2008, and takes on a value of zero for all other states for all months



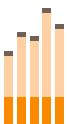
Other Independent Variables

- Supply side Variables:
 - number of table games
 - number of electronic gaming devices
 - number of casinos
- Economic Conditions
 - Important to control for the overall economic activity
 - Strong recession beginning December 2007, one month before the Smoke-Free Illinois Act took effect
 - Variables to control for economic conditions:
 - unemployment rate (from BLS)
 - coincident index (from Philadelphia Federal Reserve)
 - combines four state-level indicators including: non-farm payroll employment, average hours worked in manufacturing, the unemployment rate, and wage and salary disbursements deflated by the consumer price index (U.S. city average)



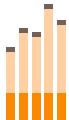
Other Independent Variables

- Dichotomous indicators for each year (less one)
 - To control for the overall distribution of revenue and admissions over time
- Dichotomous indicators for each state (less one)
 - To capture unobserved time invariant state heterogeneity
- Dichotomous indicators for each quarter of the year (less one)
 - To capture seasonality in admissions and revenue
- State*Year interaction term
 - to capture state-specific trends over time in gross receipts and admissions



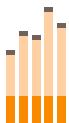
Methods

- Three-way fixed-effects regression
 - Fixed effects control for state-specific, year-specific, and quarterly-specific determinants of casino activity.
 - Assumes differences across states, over time, and between quarters not captured by the other covariates in the model are accounted for by the state, year, and quarter fixed effects.
 - Parameters are estimated by ordinary least squares regression and the standard errors are cluster corrected at the state level



Empirical Models

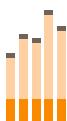
- Model 1 controls for:
 - Smoke-free Illinois Act
 - number of casinos, table games and electronic gaming devices
 - State, year, and quarter fixed effects
 - state specific time trends
- Model 2 is identical to Model 1, but Model 2 adds the unemployment rate to control for economic conditions
- Model 3 is identical to Model 2, but Model 3 replaces the unemployment rate with the coincident index as an alternative measure of state economic activity



Results: Casino Admissions

	Model 1	Model 2	Model 3
Smoking Ban	-17,651.98 (-0.14)	-26,524.06 (-0.19)	9,587.91 (0.07)
Number of Casinos	-57,551.02 (-1.15)	-55,533.67 (-1.08)	-56,700.30 (-1.13)
Number of Table Games	1,126.21 (1.67)	1,129.09 (1.68)	1,020.07 (1.66)
Number of Electronic Gaming Devices	70.70 (5.48)	68.21 (3.56)	79.68 (2.89)
Unemployment Rate		5,459.39 (0.29)	
Coincident Index			9,806.79 (0.79)

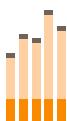
Note: all models include state, year, and quarter fixed effects and state-specific time trends.



Results: Per Capita Receipts

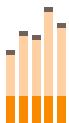
	Model 1	Model 2	Model 3
Smoking Ban	-0.20 (-0.17)	0.05 (0.04)	0.01 (0.01)
Number of Casinos	-0.27 (-0.45)	-0.33 (-0.52)	-0.26 (-0.44)
Number of Table Games	0.02 (2.01)	0.02 (2.03)	0.01 (2.12)
Number of Electronic Gaming Devices	0.00 (3.64)	0.00 (3.24)	0.00 (2.97)
Unemployment Rate		-0.15 (-0.66)	
Coincident Index			0.08 (0.62)

Note: all models include state, year, and quarter fixed effects and state-specific time trends.



Economic Impact of Smoke-Free Casinos - Conclusion

The Smoke-free Illinois Act had no impact on casino business in Illinois



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