The Impact of Casinos on a County's Crime Rates

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Abstract

Since the mid-nineties, eighteen states have passed laws that allow traditional casino establishments within specific, if not all, counties. Although there are several economic benefits associated with the casino industry, many researchers believe a strong link exists between this business and increasing crime rates. Given the range of crimes that are believed to result from the establishment of casinos, the effect of this industry on surrounding counties and states is often overlooked. This paper addresses this concern and investigates the casino industry's impact on property, violent, and burglary crime rates in counties that host casinos or are located within a 50-mile radius of one. Results from the analysis indicate no statistically significant effect of the casino industry on crime rates at the county level.

Introduction / Background

Gambling, specifically the casino industry alone, has led to an expansive discourse on its beneficial and harmful impacts on local communities. Notwithstanding the increased revenues, employment, and tourism frequency that come with the legalization of casinos,

The "social costs" from casino gambling range from psychologically addictive disorders to consumer debt, which leads to the most considerable, costly, and damaging impact: **increased crime levels** (Grinols & Mustard 2006). We investigate the strength of the casino-crime linkage and the additional components that may contribute to this relationship. More specifically, we estimate the overall effect of gambling on crime rates. Notable previous research is included below.

Stitt, Nichols, & Giacopassi (2003) report that pathological and problem gamblers comprise about 2.50% of adults in the United States, and are likely to live within 50-miles of a casino.

Thompson, Gazel, & Rickman (1997) find that many casinos foster a harmful environment that can coerce individuals into a mindset that makes them want to commit crimes. We consider the impact that a legalized county's casino can have on the crime rates for communities that are within 50-miles of the constructed casinos.

Minkyoung & Stokowski (2010) suggest that communities that are based 50-miles outside of the casinos' location undergo a spillover effect where adjacent counties without a casino experience an increase in crime solely brought in from the neighboring casino, while gaining little to no economic benefits from the establishment of the nearby casino.

The findings from this research are as follows: **the presence of a casino has no statistically significant impact on the crime rates of counties that either host, or counties that are within a 50 mile radius, a constructed, legalized, land-based casino in the United States.**

Data

Figure 1, Geographical Information System Map of all Counties Within 50 Miles of a Casino-Hosting County
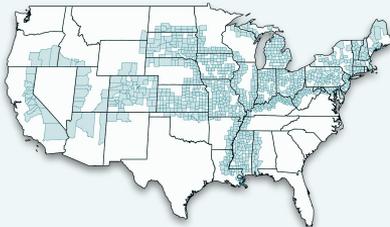
*We exclude all counties in Nevada & Louisiana due to their unique state legislation that allows the legalization of casinos at the entire state level, rather than at the discretion of the individualized county's legislation. Although the surrounding counties of Louisiana & Nevada are highlighted in Figure 1, these counties are excluded from our data.

The data for this paper comes from the 18 states in the United States with legalized land-based casinos reported by the American Gaming Association from the years 1994 to 2010, along with counties within a 50-mile radius of a casino county, allowing us to accurately measure the impact that the establishment of casinos can have on crime rates at the county level.

Figure 1 above displays a Geographical Information System map that highlights either host a legal, functioning casino; or are within 50 miles of a county that hosts a legal, functioning casino in the United States.

The data for our **dependent variable**, crime rate levels, is collected at the county level, annually, from the years 1994 to 2010 from the National Archive of Criminal Justice Data (NACJD). The type of crime we examine is Reported by the Federal Bureau of Investigation Uniform Crime Reporting Program:

    Property Crime Rates
    Violent Crime Rates
    Burglary and Theft Crime Rates

Table 1 below displays the summary statistics of the variables we use in our analysis. We separated counties into two groups: Casino Counties, observations within 50 miles of an established, legalized casino in a given year; & Non-Casino Counties, observations that are not within 50 miles of an established, legalized casino in a given year. This allows us to compare & contrast the following units of measurement for Casino Counties & Non-Casino Counties: Mean; Standard Deviation (Std. Dev.); Range; Observations (Obs.).

Variable	Units	Casino Counties				Noncasino Counties			
		Mean	Std. Dev.	Range	Obs.	Mean	Std. Dev.	Range	Obs.
Per Capita Personal Income	Dollars	26,540.00	8,509.53	115,096.00	12,888	27,255.12	8,640.99	112,605.00	7,495
Unemployment Rate	Percent(0-100)	5.81	2.74	22.63	12,888	5.47	2.35	18.36	7,495
Population	Persons	82,975.44	266,853.90	5,372,772	12,888	111,426.10	242,860.90	5,282,920.00	7,495
Police Protection	Percent(0-100)	4.19	1.17	6	12,888	4.43	0.85	0.51	7,495
Total Crime Rate	per 100,000	1,863.31	1,568.14	11,784.00	12,888	1,926.63	1,912.96	35,257.59	7,495
Property Crime Rate	per 100,000	1,677.94	1,409.20	10,393.86	12,888	1,744.92	1,658.05	26,178.31	7,495
Violent Crime Rate	per 100,000	185.38	215.23	3,069.58	12,888	181.71	322.25	9,079.27	7,495
Burglary&Theft Crime Rate	per 100,00	1,570.72	1,308.42	8,836.04	12,888	1,625.40	1,503.97	19,833.38	7,495

Table 1, Summary Statistics

Empirical Model

$$CRIME_{CT} = \beta_0 + \beta_1 CAS_{CT} + \beta_2 X_{CT} + \beta_3 Z_{ST} + a_c + u$$

CRIME → crime levels in a given county at a given amount of time
-     Burglaries per 100,000 population
-     Larcenies per 100,000 population
-     Robberies per 100,000 population
-     Motor Vehicles thefts per per 100,000 population
-     *Federal Bureau of Investigation Uniform Crime Reporting Program*

CAS → dummy;=1 IF a county hosts a casino or is 50 miles of county w/ casino, 0 otherwise
American Gaming Association / Geographic Information System Mapping

X_CT → county vector unit at a given time
-     Per capita personal income
-     Unemployment rate
-     Population density, persons per square mile
-     Police Protection Spending
-     *Federal Reserve Economic Data*

Z_ST → state vector unit at a given time
-     Casino gambling legality at the county-level
-     *American Gaming Association*

Results

	[1] Burglary and Theft Rate (all counties)	[2] Property Crime Rate (all counties)	[3] Violent Crime Rate (all counties)	[4] Violent Crime Rate (non-legal counties in legal states)
Obs.	16,616	16,616	16,616	8,331
Casino within 50 Miles	14.61 (49.56)	18.41 (53.68)	6.99 (8.64)	18.67 (-12.96)
Unemployment Rate	28.65 (9.55)	26.77 (9.1)	-2.96 (2.07)	-6.28 (-3.39)
Personal Income	-0.0008 (.0087)	-0.0068 (.0089)	0.00067 (.0002)	0.00003 (-0.0002)
Police Protection	-0.0007 (.0006)	-0.00909 (.0007)	-0.00002 (.0001)	-4.57E-06 (-0.0002)
Population			-0.0015 (-0.0023)	
R²	0.0122	0.0122	0.003	0.1405

Table 2, Results

Conclusion / Recommendations

The results from the four regressions conclude that there is not enough statistical significance to affirm that the establishment of a land-based, legalized casino considerably impacts crime rates, at the county level, for counties that have constructed, legalized, land-based casinos, along with neighboring counties that are located within 50 miles of a functioning casino in the United States.

Results from the four regressions run in Stata: Burglary & Theft Rate Fixed Effects, Property Crime Fixed Effects, Violent Crime Rate Fixed Effects, and Violent Crime Rate in Non-Legal Counties in the Non-Legal States Fixed Effects are displayed in **Table 2.**

Why Fixed Effects? We used a fixed-effects model primarily because this allows for a more precise analysis of the counties' transition from having 0 casinos to being within 50 miles of at least one casino. Several counties in the data have this transition between 1994 and 2010, rather than before or after this period occurred.

Significance: All p-values, in Table 2, are notably higher than the threshold of significance. For instance, the p-value for the Theft and Burglary regression was 0.770; 0.732 for Property Crime; 0.471 for Violent Crime; and the lowest p-value of 0.150 for Violent Crime Rate in Non-Legal Counties in the Non-Legal States Fixed Effects.

We must address the **potential biases** evident in our experiment, which directly impact the outcome of our data & results, such as omitted variable bias.

1. Shortage of available county-level data to include in our experiment
We could not include population data for the specified county's gender, racial ethnicity, educational background, and age cohort. Also, individualized county-level data on government spending on police protection was unavailable. As a result, we collected state-level data regarding the yearly spending on police protection for each year during our 17-year period, solely at the local government level.

This oversimplification of police spending, solely at the overall state's local government, does not disclose if the development of a casino inside the county or a 50-mile neighboring county resulted in an increase in police protection spending as a solution to resolve increasing crime rates within the stated county.

2. Lack of available data regarding the endogenous, numerous driving factors behind determining the location to build a casino
The initial placement of a casino can have innumerable outcomes regarding the current crime rates of the county. For instance, the impact of a casino on a county's crime rates will vary if the casino is developed in a county that includes a large metropolitan city and experiences high crime rates compared to a casino set in a small, rural city experiencing low levels of crime rates.

Given the absence of necessary data in determining accurate outcomes, our results are not conclusive nor representative of the broader impact of casinos on crime rates at the county level. Thus, we cannot support the argument that there is little to no effect on a larger scale, given our study's lack of sufficient data that would otherwise allow us to make broader assumptions. Suppose a future study was taken to evaluate the crime levels of states with legalized land-based casinos, along with counties within a 50-mile radius of a casino county, using a Fixed Effects model. In that case, the researchers may be able to draw more extensive implications if their data included additional variables.