

## **Local Opt-Out Provisions in a State Gambling Expansion: An Analysis of Pennsylvania Municipalities**

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A 2017 gambling expansion bill in Pennsylvania included a provision that gave municipalities the option to ban a new casino from opening within their borders. This paper examines how different factors influenced local decisions on whether to allow casino gambling. Multilevel linear probability models indicate that municipalities were influenced by economic characteristics, as evidenced by a higher likelihood of allowing casinos in communities with lower levels of household income. Results also suggest that municipalities were influenced by variables related to tax competition and the percentage of residents who were Black. The findings of this study identify factors that may influence municipal governments when given the authority to opt out of a state gambling expansion capable of generating a new source of local tax revenue.

Keywords: Casinos, Gambling, Local Government, Municipalities

The availability of gambling activities as a legal form of entertainment has grown substantially over the last 30 years. After the 1987 decision by the U.S. Supreme Court in *California v. Cabazon*, which ruled that states could not regulate tribal gaming operations on Indian reservations, Congress passed the Indian Gaming Regulatory Act (IGRA) the following year to allow state regulation of gambling activities. Prior to *California v. Cabazon* and the IGRA, legal casino gambling in the U.S. was limited to Nevada and Atlantic City, which became key tourist destinations as a result of their exclusive involvement in commercial casino operations. This environment was a stark contrast to the present-day gambling industry. In 2019, there was a total of 465 commercial casinos in 25 states (American Gaming Association, 2020).

The proliferation of casino gambling in the U.S. has been examined in prior research. Endogeneity in state decisions to legalize casino gambling has been hypothesized to have been influenced by motives such as job creation, tax competition, and public preferences for gaming entertainment (Boehmke et al., 2012; Calcagno et al., 2010; Furlong, 1998). While earlier studies have analyzed public policy decisions to legalize casino gambling in some states as others have continued to prohibit it, less is known about expansions in authorized casino gambling within states where casinos are already legal.

Two existing bodies of literature suggest that public preferences for expanded casino gambling may differ from preferences held prior to the initial legalization. Based on studies that found a positive link between casino revenue and economic activity (Cotti, 2008; Horváth & Paap, 2012; Walker & Jackson, 2013), a stronger perception of economic benefits may alleviate opposition to further gambling expansions compared to the time it was first legalized. At the

same time, aggregate economic benefits, such as employment and income growth, are unlikely to be shared equally within and across municipalities. It is also possible that negative outcomes associated with gambling, such as bankruptcies (Barron et al., 2002; Goss et al., 2009), crime (Falls & Thompson, 2014; Grinols & Mustard, 2006; Hyclak, 2011), and fraud (Kelly & Hartley, 2010), could dampen support from elected officials if experienced during the years following the opening of a nearby casino.

This paper analyzed a recent decision to expand casino gambling in Pennsylvania. One unique feature of this expansion in gambling activities was the combination of decision-making by state and local policymakers. In October 2017, the Pennsylvania state legislature authorized the auction of up to 10 licenses to open a smaller-sized casino with a limited number of slot machines and table games compared to regular, full-sized casinos. However, before any of these ‘mini casinos’ could open for business, the state legislature gave municipal governments a two-month time window to ban them locally by submitting a formal resolution to the Pennsylvania Gaming Control Board.<sup>1</sup>

The ability of municipalities to opt out of a gambling expansion provided an opportunity to examine factors influencing local tolerance of commercial casino operations several years after their initial legalization. Local government approval of an expansion in casino gambling within a state has not been examined in prior studies. This is an important omission considering that the majority of tax revenue collected from gaming operations in Pennsylvania is collected by the state government, while the economic benefits and costs are concentrated heavily in a small number of local areas. Since it is unlikely for state and local government representatives to be driven by the same motives, an analysis of how a local opt-out design can influence potential casino locations provides a contribution to the extant literature.

Another contribution of this paper is its focus on the possible opening of small casinos away from large population centers or resort areas. Rather than being solely an option for large population centers or tourist destinations, mini casinos were viewed by some city councils as a potential replacement for empty anchor stores in shopping malls or other local retail spaces. In other words, mini casinos have the potential to bring casino gambling to areas that would be considered financially infeasible to support a full-sized, regular casino. Given this potential for a wider pool of suitable host cities and towns compared to full-sized casinos, mini casinos are likely to cater to more convenience gamblers who gamble in close proximity to their location of residence. Eadington (1999) suggested that growth in this type of convenience gambling would have lower economic benefits and face a greater risk of political backlash.

The main results of this paper find that municipalities with larger socioeconomic disadvantages were more likely to allow casino gambling, which suggests that economic characteristics may have been a motive that influenced local government decision-making. Tax competition appears to be another concern as municipalities near the state border and within metropolitan areas also were more likely to allow casino gambling. Some evidence also suggests that local approval of gambling was higher in areas that tended to have a high consumer demand for gambling entertainment, such as those with larger Black populations.

## **Background on Casino Gambling in Pennsylvania**

When the Pennsylvania state legislature voted to expand gambling in 2017, casino gambling had already been legal in the state for over a decade. When the state legalized casino gambling in 2004, advocates for the legalization argued that it would retain revenue lost to the neighboring state of New Jersey since many Pennsylvanians would travel across state lines to casinos in Atlantic City, where casino gambling was legal since 1978. After the first casino opened in Pennsylvania during 2006, a total of 12 commercial casinos eventually would open with locations spread throughout the state. While slot machine gambling became immediately

available in Pennsylvania's casinos, table games were not allowed until 2010. A map showing the location of Pennsylvania's 12 casinos is shown in Figure 1. Most casinos are in close proximity to the state's eastern and western borders.

Since 2006, newly opened casinos in Pennsylvania have collected substantial amounts of revenue and had a significant impact on casinos in surrounding states in the Mid-Atlantic region. Prior studies estimated that the introduction of casinos in Pennsylvania have been financially detrimental to casinos in Atlantic City, NJ (Condliffe, 2012; Economopoulos & Luxem, 2015; Repetti & Jung, 2014). During 2019, Pennsylvania's casinos had \$3.38 billion in gross gaming revenue and \$1.51 billion in tax revenue (American Gaming Association, 2020). In comparison, during that same year, Nevada had \$12 billion in gross casino gaming revenue and \$969 million in tax revenue. Although casinos in Nevada have collected the highest gross revenue from gaming operations, Pennsylvania's casinos have generated the most tax revenue on an annual basis. Compared to other states, Pennsylvania has taxed casino gaming revenue at a relatively high rate (Camp et al., 2018). Slot machine revenue has been taxed at a rate of 55% while a lower tax rate of 16% has applied to revenue from table games.

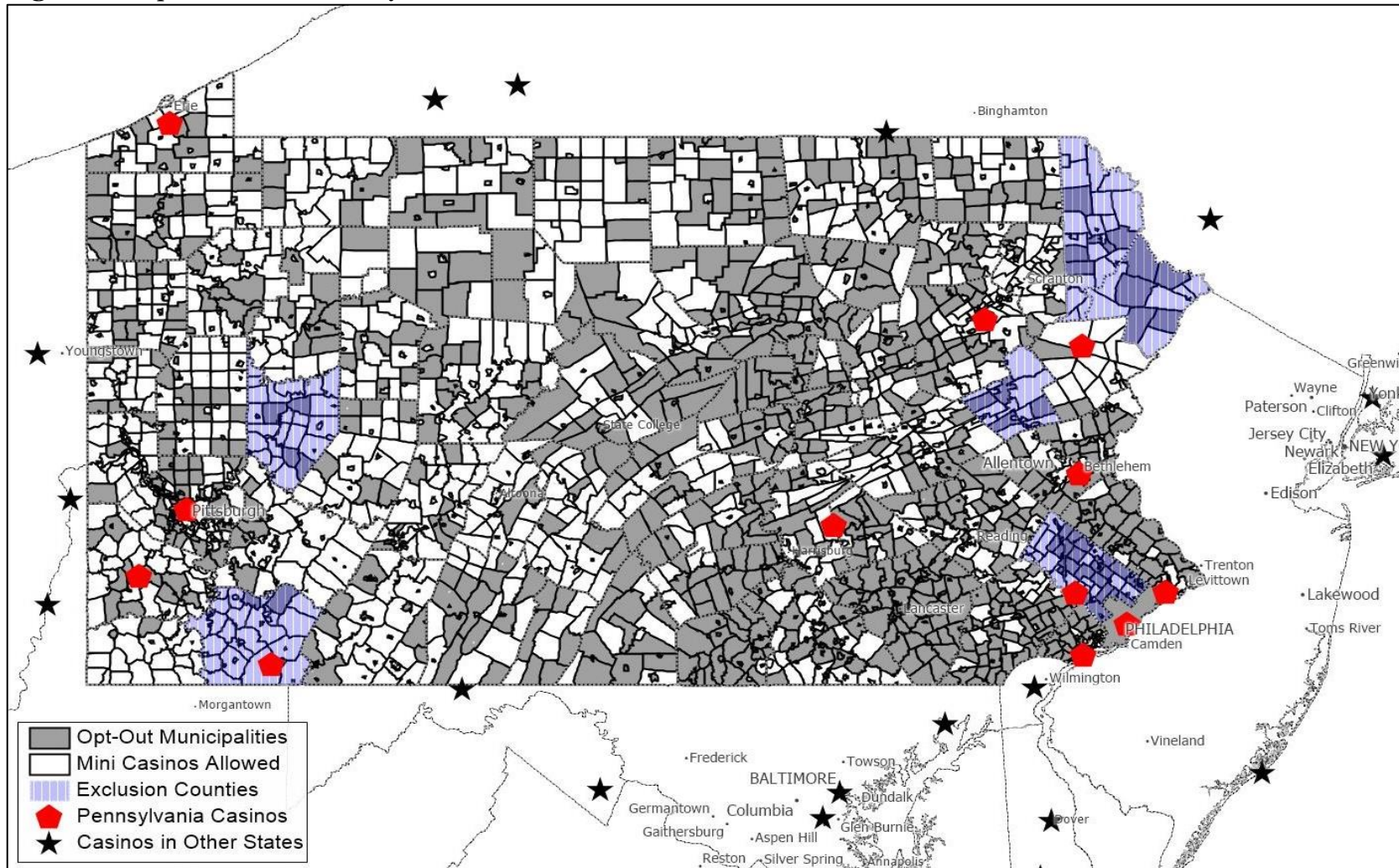
On October 30, 2017, Pennsylvania Governor Tom Wolf signed House Bill 271, which approved an expansion in legal gambling activities within the state. Besides the authorization of mini casinos, the gambling expansion bill also legalized sports betting, Internet-based gambling, and video gambling terminals at truck stops.<sup>2</sup> The Pennsylvania House of Representatives passed House Bill 271 by a vote of 109 to 72. Months before the bill received final approval, while the legislation was being developed, a Pennsylvania newspaper described the primary motive for lawmakers to expand gambling as being driven by a need to balance the state's budget. According to a reporter (Thompson), the gambling expansion's role as part of a balanced-budget strategy was described as follows:

*Elements of a hard-fought compromise package on expanded gambling in Pennsylvania are starting to take shape as lawmakers struggle to complete a plan to pay for a \$32 billion state budget. Legislative leaders, along with Gov. Tom Wolf, are said to be seeking about \$700 million in recurring revenues to close out the budget, and all sides have committed to doing that without an increase in the state income tax (Thompson, 2017, para. 1-2).*

For this study, the research question solely focused on the provision of Pennsylvania's gambling expansion law that authorized the creation of up to ten satellite, or 'mini,' casinos. Compared to the regular, full-sized casinos that already existed in Pennsylvania, mini casinos were limited to smaller quantities of slot machines and table games. More specifically, mini casinos were allowed to have up to 750 slot machines and no more than 50 table games. In order to open a mini casino, a casino operator would have to purchase a license from the Pennsylvania Gaming Control Board in an auction. License holders were not allowed to open a mini casino within 25 miles of the 12 casinos that already existed in Pennsylvania. However, an exception was given to the owners of Pennsylvania's 12 casinos. A mini casino was allowed to locate within 25 miles of an existing casino only if the same casino operator owned both establishments.<sup>3</sup>

Unlike when Pennsylvania first legalized casino gambling in 2004, one provision of the 2017 gambling expansion bill granted decision-making authority to local municipalities. If a municipal government did not want a mini casino to open within its borders, it had the ability to ban it. After the expansion bill became law on October 30, 2017, municipalities had until December 31<sup>st</sup> to opt out by sending a resolution to the Pennsylvania Gaming Control Board that indicated their decision to prohibit mini casinos. By January 2018, there were a total of

**Figure 1.** Map of Casinos in Pennsylvania



Note: Each red mark indicates the location of a regular, full-sized casino in Pennsylvania. Locations were obtained from the PA Gaming Control Board, New York Gaming Commission, New Jersey Casino Control Commission, Delaware Lottery, Maryland Lottery and Gaming Control Commission, West Virginia Lottery, and Ohio Casino Control Commission. State law prohibited mini casinos from opening in the ‘exclusion counties.’

1,017 municipalities that opted out, which represented 39.7% of all municipalities in Pennsylvania.

Another provision of the gambling expansion bill allowed municipalities a one-time ability to rescind an opt-out decision after the December 31<sup>st</sup> deadline. In other words, if a city council voted to opt out and ban mini casinos prior to the deadline, it had the opportunity to reverse its decision and let a mini casino open within its city limits. However, no city council was allowed to stop a mini casino from opening within its city if it failed to opt out by December 31<sup>st</sup>.

### **Previous Literature on Gambling Expansions**

As commercial casinos have spread throughout the US since the late 1980s, the decision to legalize them and the timing of legalization have differed significantly across states. Furlong (1998) and Calcagno et al. (2010) both analyzed determinants of casino legalization. Furlong (1998) provided four hypotheses as potential motives for the state adoption of casino gambling, which included (1) additional revenues to help balance state budgets, (2) a politically feasible substitute for higher taxes, (3) competition for gaming tax revenue with neighboring states, and (4) economic development in the form of employment and income growth. In a cross-sectional analysis on state legalization decisions by 1996, at a time when only nine states legalized casino gambling, Furlong (1998) found evidence to support the political feasibility and economic development motives. Calcagno et al. (2010) re-examined state legalization decisions using panel data from 1985 to 2000. Contrary to Furlong's (1998) study, their results supported the fiscal stress and tax competition motives, but not the economic development motive (Calcagno et al., 2010).

While these studies identified potential motives that could have influenced local decisions in Pennsylvania on whether to ban mini casinos, the circumstances surrounding the opt-out provision have important differences with earlier legalization decisions by states. Von Herrmann's (1999) analysis of gambling legalization across U.S. states found that early adopters of casino gambling were more likely to have already legalized other forms of gambling, such as a lottery or pari-mutuel betting. However, at the time of Pennsylvania's opt-out decision window for mini casinos in December 2017, the state already had legalized casino gambling for 11 years. In addition, the state government of Pennsylvania collected more tax revenue from casino gambling on an annual basis than any other state in the U.S.

Having some familiarity with the consequences of casino gambling, whether positive or negative, differentiates the decision to expand casino activities at the intensive margin with an earlier decision to legalize casinos for the first time at the extensive margin. For example, with respect to the economic development motive, the impact of the initial legalization of casinos on local job growth and tax revenue could provide an upper bound on the perceived benefits of mini casinos. The political feasibility of an expansion in casino gambling also may evolve with changes in social norms since its initial adoption. Wetzel and Luciano (2017) observed this type of transformation leading up to the legalization of a state-run lottery in Massachusetts, where public perceptions gradually became more accepting of its legitimacy as a source of tax revenue and entertainment.

Another key distinction between Pennsylvania's opt-out provision on mini casinos and the casino adoptions analyzed by Furlong (1998), Von Herrmann (1999), and Calcagno et al. (2010) would be the decision-making authority of local government representatives. In Pennsylvania, a large portion of gaming taxes are allocated to the state government while a small portion are allocated to local governments, which could soften the fiscal stress motive.<sup>4</sup> Likewise, gaming revenue generated locally could be weaker in communities lacking non-gaming amenities that attract non-resident gamblers, such as hotel rooms, food and beverage

services, and entertainment (Bryant & Walker, 2011; Kim & Kang, 2018). If perceived by local government representatives, it would weaken the economic development motive. This possibility was reflected in Toossi and Zhang's (2019) analysis of municipalities in Illinois, which were given authority by state law to allow or prohibit video gaming terminals within their jurisdictions. The findings of their study indicated that economic conditions, such as the level of median household income, had no significant effect on the decision to allow video gaming terminals at local bars and truck stops.

A closer view from the local perspective has been provided by studies on state ballot initiatives on gambling legalization. Boehmke et al. (2012) used Census tract-level data to analyze support for ballot initiatives in California to expand casino gambling across Indian tribal lands. This referendum provided an opportunity to examine support for a gambling expansion among three groups: (1) voters who lived near Indian land with gaming operations, (2) voters who lived near Indian land without gaming operations, and (3) voters who did not live near Indian land. Their main findings suggested that California voters were more likely to support the gambling expansion if they lived in close proximity to Indian reservations with casino operations on tribal land. If proximity to casinos generates public interest in gambling as a form of entertainment, the decision to opt out of mini-casino eligibility in Pennsylvania should be more likely among city councils in geographic areas further away from existing casinos.

Other studies on ballot initiatives on gambling have analyzed the decision to establish a state lottery. County-level analyses of voting results on the approval of a lottery and subsequent lottery ticket sales after legalization have provided comparisons of voting and buying decisions. Studies on lottery referenda in Kansas (Hersch & McDougall, 1989), South Carolina (Ghent & Grant, 2007), and Tennessee (Giacopassi et al., 2006) each found some asymmetries between voter and consumer behaviors, meaning the characteristics of legalization supporters have not aligned perfectly with those of lottery players.

One plausible explanation for disparities in the determinants of legalization support and consumer demand for gambling entertainment could be that the median voter is different from the average consumer. Besides simply having different set of preferences, voters could strategically support the legalization of gambling as a way to shift the tax burden onto both non-resident and resident gamblers. Similarly, the opt-out decisions of local government representatives in Pennsylvania may not align with the gambling preferences of its local citizens. In addition to a strategic shifting of the tax burden, local governments could differ from consumer preferences if their decisions are based on concerns over negative outcomes associated with casino gambling, such as gambling addiction, financial hardship, or crime. A potential disconnect between elected representatives and their communities may be reflected in how opposition to gambling is sometimes framed in policy discussions. In an analysis of speeches in state legislatures, Ferraiolo (2013) found that legislators opposing state-run lotteries often criticized the soundness of judgement in the government rather than question the morality of private behavior among citizens.

## **Methods**

### *Data*

Multiple sources of data were used to assess determinants of local eligibility for mini casinos in Pennsylvania. Due to limitations in data availability, some variables were measured at the municipal level (i) while others were measured at the county level (j). The dependent variable,  $Yes_{ij}$ , is a binary variable equal to 1 if a municipality remained eligible as a site for a mini casino after the December 2017 deadline. In other words, the variable,  $Yes_{ij}$ , equals 1 if a municipality did not opt out of the gambling expansion. A list of opt-out municipalities was obtained from the Pennsylvania Gaming Control Board. Out of 2,560 municipalities in Pennsylvania, a total

of 1,543 municipalities (or 60.3%) remained eligible as a potential location for a mini casino while 1,017 municipalities (or 39.7%) elected to opt out. The decision to opt out was modeled by controlling for variables that accounted for possible motives among municipal governments and other community characteristics.

Demographic variables measured at the municipal level were obtained from the 2010 decennial U.S. Census, which included variables for the proportions of municipal populations that were under age 18, ages 65 or older, African American, and Hispanic. The number of general-purpose subcounty governments within the same county  $j$  as municipality  $i$  was obtained from the 2012 Census of Governments. Municipalities were expected to be more likely to allow mini casinos if they competed with more nearby municipalities for jobs and tax revenue. Dummy variables indicating if a municipality was in a metropolitan area or a county that bordered another state were included to further control for the possible motive of exporting a local tax burden onto commuters, visitors, or surrounding states. The potential of mini casinos to attract residents from nearby areas was expected to make municipalities in metropolitan areas and border counties more likely to remain eligible as a potential site. This type of diffusion in strategic policy adoption also has been observed in prior literature on state lottery legalization, where the presence of a lottery in a nearby state has been found to encourage adoption (Berry & Berry, 1990; Nelson & Mason, 2003; Pierce & Miller, 1999).

Economic characteristics were measured with county-level variables for a county's unemployment rate, median level of household income, poverty rate, and percentage of residents aged 25 or older with a bachelor's degree or higher. Each of these variables were obtained from the 2012-2016 American Community Survey (ACS) 5-year estimates. The likelihood of allowing mini casinos was expected to be higher among municipalities in areas with socioeconomic disadvantages, such as higher unemployment, lower income levels, and less education among prime working-aged adults. If mini casinos were perceived as a potential generator of income and employment, the economic development motive for accepting local casino activity would have been stronger in these areas. Alternatively, an association between opting out and income levels may reflect local government responsiveness to citizen preferences for casino gambling as a form of entertainment, which could be stronger in low-income areas.

Lastly, a collection of variables identified other potential differences across municipalities with respect to public preferences or tastes for mini casinos as a form of entertainment. The aggregate value of lottery prizes won by county residents was obtained from the Pennsylvania Department of Revenue and used as a proxy variable for gambling preferences. While per capita lottery winnings were expected to be indicative of a desire for mini casinos by the overall public, it was not clear whether lottery participation was also indicative of the opt-out decision by representatives on a municipal government. If local government representatives share a desire to gamble or simply wish to expand gaming entertainment options in an area that enjoys gambling, per capita lottery winnings would be expected to have a positive association with the likelihood of allowing mini casinos. However, an alternative possibility could be that concerns about problem gambling and its negative externalities were higher in areas with more per capita lottery winnings. Under this hypothesis, concerns among representatives on municipal governments would lead to a lower probability of local support for the gambling expansion.

Dummy variables for the presence of a four-year college or university and the presence of one of Pennsylvania's regular, full-sized casinos within the same county as the municipality also were included as gambling preference variables.<sup>5</sup> Similar to the effect of per capita lottery winnings, the expected effects of these dummy variables also were unknown a priori. While areas with colleges and casinos may have higher demand for gambling activities, they also may have heightened concerns over the negative outcomes associated with gambling. Previous research found higher crime rates on college campuses in close proximity to casinos (Hyclak,

2011). In addition, municipal representatives could be less supportive of mini casinos if the economic impacts of colleges and full-sized casinos reduce the perceived marginal benefits of additional jobs and tax revenue from expanded gambling opportunities.

Other gambling preference variables included the proportion of county residents who were evangelical Protestants, Catholic, mainline Protestants, and voted for the Democratic candidate in the Pennsylvania gubernatorial election of 2014. Previous research has found stronger opposition to gambling among evangelical Protestants and less opposition among Catholics (Brown et al., 2003). Since Pennsylvania's largest gambling expansions in recent history were both proposed by Democratic governors, Ed Rendell in 2004 and Tom Wolf in 2017, the willingness to allow mini casinos was expected to be higher in Democratic-leaning areas. The proportion of county voters who voted for Governor Tom Wolf in 2014 was used as a measure of a municipality's political affiliation.<sup>6</sup>

### *Empirical Strategy*

Since the independent variables included both municipal- and county-level data, the opt-out decisions of municipalities were estimated with a multilevel linear probability model with random intercepts. This model specification accounts for the possibility that municipal governments nested within the same county may share similar county-level random effects. If this assumption is accurate, error terms associated with municipalities within the same county are unlikely to be independent of each other in a pooled regression model. Estimations that ignore the hierarchical structure of the data would likely lead to incorrect coefficients and standard errors. A two-level random-intercept model addresses this concern by estimating parameters based on the entire sample of municipalities while controlling for unobserved heterogeneity in opt-out decisions across counties.<sup>7</sup> While nonlinear models may provide a better approximation of average marginal effects in some cases, coefficient estimates using linear probability models are often similar (Angrist & Pischke, 2009). For this reason, multilevel linear probability models are used in the analysis of opt-out decisions.<sup>8</sup> The functional form of this opt-out decision model is shown in Equation 1.

$$\{\Pr(\text{Yes}_{ij} = 1) | X_{ij}, Z_j, u_j\} = \alpha_0 + \beta X_{ij} + \gamma Z_j + u_j. \quad (\text{Equation 1})$$

The main outcome of interest,  $\text{Yes}_{ij}$ , is a dummy variable indicating that municipality  $i$  from county  $j$  did not opt out of the gambling expansion and decided to remain eligible as a potential location for a mini casino. For ease of interpretation, the dependent variable was coded in this manner so that positive coefficients in vectors  $\beta$  and  $\gamma$  reflect positive correlations between covariates and a municipality's willingness to allow casino gambling within its borders. The vector  $X_{ij}$  includes independent variables measured at the municipal level while the vector  $Z_j$  includes county-level variables. A constant intercept is denoted by  $\alpha_0$  while random deviations from it for each county are included in vector  $u_j$ . Random intercept values in vector  $u_j$  are normally distributed with a mean of zero and a constant variance. It is assumed that the intercept values in  $u_j$  are independent across counties.

Data on all 2,560 of Pennsylvania's municipalities from 67 counties were compiled from the various sources described above. Since 12 municipalities already had a regular, full-sized casino within their borders during the opt-out time window, these municipalities were excluded from the analysis.<sup>9</sup> Two of the cities excluded from the analysis were Pittsburgh and the consolidated city-county of Philadelphia, which are Pennsylvania's two most populous cities. After this exclusion, multilevel linear probability model estimates were based on a dataset of 2,548 municipalities from 66 counties.

Descriptive statistics of the full dataset are shown in Table 1. Out of 2,548 municipalities, a total of 1,534 (or 60.2%) elected to remain eligible as a potential location for a mini casino. Most municipalities were predominately White, but there was a large amount of variation in



**Table 1.** Descriptive Statistics for Pennsylvania Municipalities

	Mean	Standard Dev.	Minimum	Maximum
<i>Municipal-Level Variables</i>				
Yes (0,1)	0.602	(0.489)	0	1
% Under 18	21.60	(4.38)	0	73.20
% 65 and older	17.00	(4.89)	1.40	72.70
% Black	2.54	(6.97)	0	88.60
% Hispanic	2.13	(3.94)	0	59.00
Public college in municipality (0,1)	0.009	(0.095)	0	1
<i>County-Level Variables</i>				
Total municipalities in county	49.99	(24.63)	7.00	128.00
Border county (0,1)	0.438	(0.496)	0	1
Metropolitan area (0,1)	0.515	(0.500)	0	1
Casino in county (0,1)	0.236	(0.425)	0	1
Unemployment rate	6.60	(1.085)	4.40	10.30
Median household income (in \$1,000s)	53.27	(10.80)	36.59	89.00
Poverty rate	12.66	(2.97)	5.90	19.10
% Bachelor's degree or higher	24.12	(9.38)	8.30	50.20
% Evangelical Protestant	9.35	(4.27)	2.35	23.67
% Mainline Protestant	16.75	(4.68)	6.16	27.62
% Catholic	22.84	(13.33)	1.07	70.36
Lottery prizes per capita	216.62	(56.38)	111.30	382.65
% Vote for Democratic Governor	46.99	(8.84)	29.54	69.74
Sample size	2,548			

Note: The analysis excluded 12 municipalities that already hosted a regular, full-sized casino within their borders.

the size of the Black and Hispanic populations across the state. Across counties, the average unemployment rate over the 2012-2016 period was 6.6%. The average value of county-level median household income across municipalities was \$53,270. Proxy variables for the demand for gambling entertainment indicated that counties received an average of \$216.62 per capita in lottery prizes, and 23.5% of municipalities were in counties that already had casinos.

## Results

Multilevel linear probability model estimates for the decision of municipalities in Pennsylvania to allow mini casinos are shown in Table 2. Models 1 and 2 show results based on the full sample of 2,548 municipalities. A null model without any independent variables, Model 1, was estimated to assess the variation in municipal decisions across counties and the need for multilevel analysis. With only random intercepts and no control variables, Model 1 had an intraclass correlation coefficient of 16.9%. A likelihood ratio test comparing the random-intercept model to a pooled logit model indicated that the between-counties variance was statistically different from zero, which suggested that a multilevel analysis was preferable.

Municipal- and county-level covariates were added to Model 2. Coefficient estimates are shown in Table 2. The likelihood of allowing casino gambling was higher in municipalities with larger Black populations and those located within a border county. Opting out was more likely among municipal councils in counties with higher levels of median household income. These results suggest a combination of motives influenced the decision to become eligible for a mini casino. Stronger support among councilors in border counties aligns with the hypothesis that

**Table 2.** Multilevel Linear Probability Model Estimates for the Decision to Allow Mini Casinos

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Full sample (No covariates)		Full sample (Linear income)		Full sample (Quadratic income)		Full sample (Income quintiles)	
	Coefficient	(S.E.)	Coefficient	(S.E.)	Coefficient	(S.E.)	Coefficient	(S.E.)
<i>Municipal-Level Variables</i>								
% Under 18			-0.001	(0.003)	-0.001	(0.003)	-0.002	(0.003)
% 65 and older			-0.000	(0.002)	-0.001	(0.002)	-0.000	(0.002)
% Black			0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)
% Hispanic			0.004*	(0.003)	0.004*	(0.003)	0.004*	(0.003)
Public college in municipality (0,1)			-0.002	(0.098)	-0.002	(0.098)	-0.005	(0.098)
<i>County-Level Variables</i>								
Total municipalities in county			-0.001	(0.001)	-0.001	(0.001)	-0.001	(0.001)
Border county (0,1)			0.116**	(0.047)	0.115**	(0.046)	0.101**	(0.048)
Metropolitan area (0,1)			0.092*	(0.055)	0.112**	(0.055)	0.115**	(0.055)
Casino in county (0,1)			0.014	(0.067)	0.019	(0.065)	0.052	(0.068)
Unemployment rate			0.035	(0.022)	0.042*	(0.022)	0.027	(0.021)
Median household income (in \$1,000s)			-0.018***	(0.007)	-0.051***	(0.019)	-	-
Median household income (in \$1,000s) squared					0.000*	(0.000)	-	-
Median household income – 2 <sup>nd</sup> quintile					-	-	-0.012	(0.067)
Median household income – 3 <sup>rd</sup> quintile					-	-	-0.081	(0.071)
Median household income – 4 <sup>th</sup> quintile					-	-	-0.244**	(0.096)
Median household income – 5 <sup>th</sup> quintile					-	-	-0.336**	(0.133)
Poverty rate			-0.005	(0.015)	-0.013	(0.015)	-0.006	(0.012)
% Bachelor's degree or higher			0.006	(0.007)	0.008	(0.007)	0.001	(0.005)
% Evangelical Protestant			-0.004	(0.006)	-0.005	(0.006)	-0.005	(0.006)
% Mainline Protestant			0.005	(0.006)	0.004	(0.006)	0.002	(0.006)
% Catholic			0.001	(0.003)	-0.000	(0.003)	-0.001	(0.003)
Lottery prizes per capita			0.001	(0.001)	0.001	(0.001)	0.001	(0.001)
% Vote for Democratic Governor			0.002	(0.004)	0.002	(0.003)	0.001	(0.004)
<i>Model Fit Statistics</i>								
Intraclass correlation coefficient	0.169		0.084		0.079		0.081	
Log likelihood	-1,621.18		-1,575.11		-1,573.59		-1,574.35	
Likelihood ratio test (Chi-squared)	347.01***		133.52***		119.65***		133.63***	
Sample size	2,548		2,548		2,548		2,548	
Number of counties	66		66		66		66	

Notes: Coefficient estimates for multilevel linear probability models are reported with standard errors in parentheses. Statistical significance is denoted by \*, \*\*, and \*\*\* for significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is a binary variable equal to one if a municipality did not opt out of the gambling expansion and allowed mini casinos.

tax competition motivated eligibility decisions. At a weaker level of significance, the marginal effect of metropolitan areas also supported the tax competition hypothesis. This would be expected if councilors in larger population centers viewed mini casinos as a strategy to retain the gambling expenditures of their own residents. Meanwhile, weaker support from councilors in higher income areas would be consistent with motives related to economic development.

The positive link with the Black population share, by itself, does not identify a clear motive. If job opportunities are less plentiful in Black communities, this finding could be due to the economic development hypothesis. However, if this link was driven by a higher demand for casino entertainment among Black residents, it would be consistent with the consumer demand motive. At the 10% level of significance, a positive association also exists between mini casino legalization and the Hispanic population share. Other variables related to public support for gambling, such as per capita lottery prizes and Democratic voters, were insignificant predictors of opt-out decisions.

Further examination of the relationship between local-area income and decisions to allow mini casinos were provided in Models 3 and 4, which considered the possibility of a nonlinear relationship. Model 3 included the squared value of county-level median household income to test whether a quadratic relationship existed. Similar to the linear model, a negative relationship was estimated using the quadratic model. While the slope coefficient on the squared income variable was positive, the estimated marginal effect of income was negative for all values of median household income in the sample, including the maximum value of \$89,000. In Model 4, local-area income variables were measured using dummy variables to indicate a municipality's quintile ranking for county-level median household income based on the sample of 2,560 municipalities in Pennsylvania. According to this specification, municipalities from the top two quintiles were less likely to allow mini casinos. Compared to the first, second, and third quintiles (county-level median < \$54,142), municipalities from the fourth (\$54,142 < county-level median < \$59,237) and fifth (county-level median > \$59,237) income quintiles were less likely to allow mini casinos by magnitudes of 24.4 and 33.6 percentage points, respectively.

To assess the generalizability of the estimates reported above, alternative models were derived to compare the partial effects of variables across different categories of municipalities, which were based on proximity to the nearest casino and median household income. Model 5 includes the same variables as Model 2, but added interaction terms that multiplied each covariate by a dummy variable indicating a municipality was within 25 miles of a casino.<sup>10</sup> Similarly, Model 6 also re-estimated Model 2, but included interaction terms for each variable and a dummy variable indicating geographic presence in a county with median household income above the state's median level.<sup>11</sup> Table 3 shows results from Models 5 and 6. For ease of interpretation, coefficients on interaction terms were omitted from the table. Instead, for each model, the first column of partial effects are reported for municipalities in the base category. The second column reports partial effects for the alternative category of municipalities, which were obtained by calculating a linear combination of the coefficients in the first column with coefficients from the corresponding interaction terms. Tests for differences in coefficient values across two mutually exclusive categories were obtained by testing whether an interaction term's coefficient was statistically different from zero.

Across most categories in Table 3, municipalities with larger Black population shares and those located within border counties and metropolitan areas were more likely to remain eligible for mini casinos. Municipalities in high income areas tended to opt out and oppose the opening of a mini casino. These estimates provide support for the possibility that tax competition, economic development, and consumer preferences influence local government decisions on gambling legalization. The results in Table 3 also indicate that there is heterogeneity in how some factors influence gambling legalization decisions across municipalities. Tax competition variables were given heavier weight by local governments

**Table 3.** Multilevel Linear Probability Model Estimates With Interaction Effects

	<i>Model 5: Casino Proximity Comparisons</i>					<i>Model 6: Household Income Comparisons</i>				
	<i>No casino within 25 miles</i>		<i>Casino within 25 miles</i>		<i>Diff. Test</i>	<i>Below median income</i>		<i>Above median income</i>		<i>Diff. Test</i>
	Coefficient	(S.E.)	Coefficient	(S.E.)	Sig. level	Coefficient	(S.E.)	Coefficient	(S.E.)	Sig. level
<i>Municipal-Level Variables</i>										
% Under 18	-0.002	(0.004)	-0.003	(0.004)		-0.003	(0.003)	-0.001	(0.004)	
% 65 and older	-0.001	(0.003)	-0.001	(0.003)		-0.001	(0.003)	-0.000	(0.004)	
% Black	0.006	(0.004)	0.009***	(0.002)		0.006***	(0.002)	0.010***	(0.002)	
% Hispanic	0.000	(0.005)	0.007**	(0.003)		0.007	(0.006)	0.005	(0.003)	
Public college in municipality (0,1)	-0.091	(0.137)	0.104	(0.139)		-0.112	(0.133)	0.120	(0.146)	
<i>County-Level Variables</i>										
Total municipalities in county	-0.002	(0.002)	-0.000	(0.001)		0.001	(0.001)	0.005**	(0.002)	
Border county (0,1)	0.105*	(0.057)	0.137**	(0.063)		0.137***	(0.040)	-0.005	(0.104)	
Metropolitan area (0,1)	0.216***	(0.078)	0.044	(0.070)	**	0.168***	(0.054)	0.007	(0.083)	
Casino in county (0,1)	-	-	-	-		-0.195**	(0.085)	0.281**	(0.126)	***
Unemployment rate	0.030	(0.028)	0.027	(0.031)		0.023	(0.022)	0.119**	(0.056)	
Median household income (in \$1,000s)	-0.018**	(0.009)	-0.016**	(0.008)		-0.005	(0.009)	-0.027**	(0.012)	
Poverty rate	0.001	(0.019)	0.001	(0.021)		0.010	(0.015)	-0.024	(0.035)	
% Bachelor's degree or higher	0.002	(0.008)	0.007	(0.010)		-0.008	(0.007)	0.032***	(0.013)	***
% Evangelical Protestant	-0.007	(0.006)	-0.007	(0.009)		0.008	(0.006)	-0.028**	(0.011)	***
% Mainline Protestant	-0.000	(0.007)	0.009	(0.008)		-0.001	(0.005)	0.007	(0.023)	
% Catholic	0.001	(0.003)	0.001	(0.005)		0.003	(0.003)	-0.006	(0.005)	*
Lottery prizes per capita	0.001*	(0.001)	0.001	(0.001)		0.000	(0.000)	0.001	(0.001)	
% Vote for Democratic Governor	0.002	(0.004)	0.003	(0.005)		0.004	(0.003)	-0.020	(0.014)	*
<i>Model Fit Statistics</i>										
Intraclass correlation coefficient	0.082					0.033				
Log likelihood	-1,568.07					-1,553.07				
Likelihood ratio test (Chi-squared)	98.08***					27.79***				
Sample size	2,548					2,548				
Number of counties	66					66				

Notes: Coefficient estimates for multilevel linear probability models are reported with standard errors in parentheses. Statistical significance is denoted by \*, \*\*, and \*\*\* for significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is a binary variable equal to one if a municipality did not opt out of the gambling expansion and allowed mini casinos.

in different areas. The positive effect of metropolitan area status was stronger among municipal governments located further away from a casino. In addition, areas with larger percentages of college graduates were more likely to support gambling, but only for municipalities located in high-income counties.

The effects of consumer demand variables also showed heterogeneity across the subsamples in Table 3. As expected, areas with more evangelical Protestants were more likely to oppose gambling, but this finding was limited to the subsample of higher income municipalities. Lottery participation did not appear to have a strong effect on opt-out decisions. There was weak evidence of a higher likelihood of allowing casinos among councilors representing areas that had higher lottery participation and were not located near a casino. Political support for the Democratic Party also did not have much impact across categories. At most, there was weak evidence of a lower likelihood of allowing casinos in high income areas with greater Democratic support.

Evidence to support the influence of economic factors on opt-out decisions was slightly stronger among municipalities in higher income areas. For these municipalities, the likelihood of allowing mini casinos increased with the unemployment rate and fell with median household income. This result was not observed for the category of municipalities from lower income areas. A plausible explanation could be that jurisdictions slightly above the state's median income level perceive a greater economic impact from legalized gambling as well as greater prospects for attracting a mini casino compared to lower income areas. At the same time, jurisdictions further above the state's median income level may be more concerned about the negative consequences associated with casinos, such as problem gambling or crime. However, evidence of interaction effects is somewhat weak among the economic variables. Despite having larger magnitudes on coefficient values in the high-income category, tests for differences in coefficient values compared to the low-income category found no statistical differences in the effects of the unemployment rate or median household income. Furthermore, in each set of estimates, the poverty rate of a county was a statistically insignificant predictor of the opt-out decision.

## **Conclusions and Discussion**

This paper analyzed local government support for an expansion of casino gambling in Pennsylvania. Unlike the introduction of casinos when the state legalized them in 2004, the possible opening of a mini casino in a municipality was expected to involve weaker economic benefits and a greater reliance on local residents who are convenience gamblers. Despite this possibility, the main findings indicated that municipalities were more likely to allow mini casinos in local areas with lower income levels. If the decision to allow mini casinos was driven by an economic development motive, in which the goal was to generate income and employment growth, it would align with the finding by Furlong (1998) as opposed to Calcagno et al. (2010) and Toossi and Zhang (2019). While there may appear to be mixed evidence about the relationship between median income levels and gambling policies, existing studies vary based on the forms of gambling, levels of government, and time periods that were analyzed. The main contribution of this paper was the focus on municipal-level decisions to allow an expansion in casino gambling within a state where casinos already existed.

While the main findings suggest that a municipality's economic background may have motivated decisions to allow mini casinos, it was not the only motivating factor. Tax competition and consumer preferences for gambling also were found to encourage the legalization of mini casinos. Model estimates indicated that the municipalities in border counties and metropolitan areas were more likely to allow legalized gambling. Both factors provide support for a similar conclusion by Calcagno et al. (2010), who found that earlier decisions by U.S. states to legalize casinos were influenced by a desire to retain the gambling

expenditures of their own residents. If residents of municipalities in border counties and metropolitan areas tend to be more inclined to travel to outside gambling establishments, a local mini casino could be perceived as a strategy to keep their expenditures in the local economy.

In a similar vein, a mini casino also could be part of a local government's strategy to diversify its tax base. Prior research on the legalization of lotteries estimated a higher likelihood of adoption among states facing restrictions on the allowable growth rate in property tax assessments (Glickman & Painter, 2004). Legalizing gambling to address local fiscal struggles aligns with some of the results of this paper, such as the negative link between median household income and council decisions to allow mini casinos. Local tax and expenditure limitations are expected to be less binding in higher-income areas with greater property values. Additionally, diversifying the local tax base could be a higher priority among municipalities in metropolitan areas and along the state border, which can experience more intense tax competition with neighboring jurisdictions. Considering that restrictions on local property taxes can vary substantially across the U.S. (Carroll & Johnson, 2010; Stallmann et al., 2017; Sun, 2014; Wang, 2018), the results of this study may not be generalizable to some local governments outside of Pennsylvania. In particular, it is possible that stricter limitations on local taxes and expenditures may cause city councils to become more accepting of mini casinos as a strategy to diversify a community's tax base.

Another finding of this paper was a higher willingness to participate in Pennsylvania's gambling expansion among municipalities with larger Black populations. Greater support for gambling among minority populations would agree with the findings of prior research on public interest in gambling (Garrett & Sobel, 2004; Ghent & Grant, 2007; Ghent & Grant, 2010; Giacomassi et al., 2006; Scott & Garen, 1994). However, the dataset used in this paper was unable to identify a reason for higher support among Black communities. Future studies should examine if communities with large Black populations support gambling due to higher perceptions of economic insecurity or higher consumer demand for casino gambling.

An additional limitation of this study was the potential for inertia in decision-making on the part of municipal governments. The opt-out design of the local option to allow casino gambling could have created an outcome in which some municipalities remained eligible for a mini casino despite a public consensus against it. Some municipalities concerned about gambling may not have passed an opt-out resolution due to doubt that a casino would decide to locate in their jurisdictions, even if allowed by law. This hypothesis may partially explain why median income had a negative association with opt-out decisions. As convenience gambling continues to become available in areas outside of traditional tourist destinations and population centers, the distinction between status-quo bias and a genuine approval of local casino gambling warrants further investigation.

Policymakers also should be aware of unique features that could distinguish Pennsylvania's gambling market from other states. An analysis limited only to Pennsylvania may not produce results that can be generalized to every state. With respect to casino gambling, consumer preferences for casino gambling may be higher in Pennsylvania. For example, the state has residents who lived in close proximity to Atlantic City, NJ for multiple decades while it was one of only two locations where casino gambling was legal in the U.S. Pennsylvania also has residents who might view casino gambling as a greater source of government revenue since the state collects more tax revenue from casinos than any other state. In addition, state variation in how gaming revenues are distributed between state and local governments also may limit the external validity. For example, cities that host full-sized casinos in Arkansas receive 19.5% of all casino tax revenue whereas host cities in Pennsylvania and Ohio only receive 4% and 5%, respectively (American Gaming Association, 2021). Future studies should examine the potential for disparities in how local governments in other states either embrace or resist attempts to generate state revenue from convenience gambling in local communities.

Other states that consider allowing local autonomy in gambling expansions should be cognizant of how Pennsylvania differed from an earlier case in which Illinois allowed local bans on video gaming terminals. Toossi and Zhang (2019) found that opposition to video gaming terminals was stronger in Illinois municipalities with more senior citizens, college graduates, and religious adherents while economic factors had little effect on opt-out decisions. Even though both state gambling expansions included opt-out decisions for local governments, the analysis of Pennsylvania's expansion suggested that economic factors were more predominant for casino gambling. A plausible explanation for this result could be that casinos, even mini casinos, are perceived to attract more visitors to a local economy than video gaming terminals at bars and truck stops. Compared to an abundance of Illinois establishments with video gaming terminals, Pennsylvania only had a small number of casinos with more unique games and larger prize opportunities.

The notion that consumer preferences are heterogeneous across different types of gaming (i.e., casinos, lotteries, horse racing, etc.) has been validated by prior studies (Walker & Jackson, 2008; Walker & Nesbit, 2014). Furthermore, given the potential for substitution between different types of games, future studies should assess how local opt-out authority can distort the optimal location decisions among gaming operators. The introduction of casino gambling in Pennsylvania since 2006 has been found to reduce revenue among competing casinos in Atlantic City, NJ, and other markets in the Mid-Atlantic region (Condliffe, 2012; Economopoulos & Luxem, 2015; Repetti & Jung, 2014). With 40% of Pennsylvania's municipalities banning mini casinos, understanding the implications of such geographic restrictions on further cannibalization of the gambling market would help guide policymakers.

## **Notes**

1. Mini casinos in Pennsylvania also have been referred to as satellite casinos or category 4 casinos. State law limits them to having no more than 750 slot machines and 50 table games. In comparison, full-sized casinos can have up to 3,000 slot machines and 250 table games.
2. In counties that already hosted a casino, county governments were allowed to ban video gaming terminals at truck stops. Out of 12 counties with casinos, 10 prohibited video gaming terminals. Counties without casinos were not given an opt-out choice.
3. The 2017 gaming expansion bill stated that mini casinos also could not open in a county that already had a resort casino, meaning a resort was attached to the casino. This affected Fayette and Montgomery counties. Mini casinos also were prohibited from opening in any sixth-class county that was adjacent to a county that hosted a stand-alone casino, which did not have a racetrack or resort. As a result of this provision, mini casinos were not allowed to open in Armstrong, Carbon, Pike, or Wayne counties. Despite these provisions, some municipalities in each county still submitted opt-out resolutions to the PA Gaming Control Board.
4. In Pennsylvania, the state government collects a 34% tax on slot machine revenue compared to a 4% tax distributed to the host county and municipality. Additional taxes on slot machine revenue are distributed to state funds to benefit economic development and the horse racing industry. For table games, the state collects a 12% tax, while an additional 4% tax is equally shared by the host county and municipality.
5. Data on the location of colleges and universities were obtained from the 2017 release of the Integrated Postsecondary Education Data System (IPEDS). The locations of casinos were provided by the PA Gaming Control Board.
6. Outside of Pennsylvania, the expected likelihood of support for legalized gambling among Democratic voters may be less certain. While a gambling expansion could generate tax revenue to help fund government programs valued by the Democratic Party, progressive constituents may object on the perception that gambling is a regressive form of taxation.

7. Despite its advantages, estimates based on a multilevel linear probability model with random effects can be limited by the 'random effects assumption.' Multilevel random-intercept models assume that unobservable level-2 (county) characteristics are uncorrelated with observable level-1 (municipality) characteristics that are included in the model (Robson & Pevalin, 2016; Clarke et al., 2015). A violation of the random effects assumption can compromise the consistency of the coefficient estimates.
8. Opt-out decisions of Pennsylvania municipalities also were estimated using a multilevel random-intercept logit model. The results were similar to the multilevel linear probability model estimates that are reported.
9. A total of 4 out of the 12 municipalities that hosted regular, full-sized casinos elected to opt out and prohibit mini casinos. These municipalities included Bensalem Township (Parx Casino and Racing), Summit Township (Presque Isle Downs), Upper Merion Township (Valley Forge Casino Resort), and the consolidated city-county of Philadelphia (SugarHouse Casino).
10. ArcGIS 10.6 was used to determine if municipalities were located within 25 miles of a casino. Longitude and latitude coordinates were used to identify the location of casinos and the centroids of municipalities.
11. Based on the 2012-2016 ACS 5-year estimates, the median level of household income in Pennsylvania, \$54,895, was used as the cutoff between high- and low-income counties.

## Disclosure Statement

The author declares that there are no conflicts of interest that relate to the research, authorship, or publication of this article.

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