# Effects of Per-capita Payments on Tribal Governance of the Health vs. Wealth Tradeoff

Adam Crepelle
*Antonin Scalia Law School at George Mason University*
acrepell@gmu.edu

Paasha Mahdavi
*University of California—Santa Barbara*
paasha@polsci.ucsb.edu

Dominic Parker
*University of Wisconsin—Madison*
dominic.parker@wisc.edu

**March 2022**

**Abstract:** Some governments distribute profits from state-owned enterprises to citizens on a per-capita basis while others do not. Does the use of per-capita payments affect how governments tradeoff pro-economy policies with other constituent interests such as environmental quality and public health? We study this question in the context of tribal government decisions to close or keep open casinos on American Indian reservations during the COVID-19 pandemic. The role of per-capita payments – which range from a few hundred dollars to over one million dollars per year – in driving this decision is theoretically unclear. On one hand, tribes that offer per-capita payments might face greater pressure to keep casinos open to maintain a stable flow of dividends. On the other hand, tribal governments that do not provide such payments may experience a weaker connection between casino profits and individual outcomes; keeping casinos closed may therefore be feasible as a public health strategy. Using original data on per-capita payments and administrative data on the operational status of over 200 tribal casinos, we investigate whether and how the existence of per-capita payments relates to the number of days casinos were closed since March 2020. After controlling for casino size at the onset of COVID-19 as well as demographic, economic, and geographic characteristics of the reservations in which the casinos operate, we find that casinos governed by per-capita payments remained open about 17 to 29 percent longer. This implies that the decision to pay dividends to citizens affects the size of revenues from state-owned enterprises rather than merely determining how they are distributed.

## Introduction

Development economists studying the "health-wealth gradient" have tried to understand the extent to which income-generating industrial development within a community must come at the expense of health, safety, and environmental quality (see Deaton 2002). The short-run tradeoff is relatively clear. Societies who embrace aggressive development earn more but put community health at risk. In the longer-run, however, increases in overall income should lead to increases in health-improving public expenditures (Pritchett and Summers 1996).

Importantly, the wealthier-is-healthier hypothesis requires "a thoroughgoing redistribution of income and wealth [that] is key to improving population health" (Deaton 2002, 14). Otherwise, the link between economic development and health is broken by inefficiencies in converting government revenue into realized outcomes (Case and Deaton 2005), either because of corruption, informational deficiencies, or targeted transfers that serve to exacerbate health inequities. By contrast, when economic development is directly translated into increases in household income—as is the case with direct dividends and other universal cash transfers—there is a clear pathway towards improved health. Cash transfers improve a citizen's ability to purchase food, healthcare, and reduce the stress associated with paying for necessities.

We study the governance of the health-wealth tradeoff in the context of American Indian communities. Tribal leaders often face a governing dilemma that pits their communities' short-run health and wellbeing against their economic development priorities. Coal mining and oil production, for example, can bring substantial wealth to tribal communities for schools, citizen housing, health clinics and drug rehab centers but risks environmental damage to local watersheds and air quality.[1] Tribes considering casino enterprises face similar dilemmas. Gaming brings revenue and economic development that can fund health care and cultural centers but it can also increase the risk of crime, addiction, and drug and alcohol abuse.

We hypothesize that governance of the health–wealth gradient differs when tribal governments distribute revenues to individual citizens rather than using revenues to finance public goods. We test this hypothesis in the context of tribal casino gaming. These facilities proliferated after the landmark U.S. Supreme Court ruling on *California v. Cabazon Band of Mission Indians* in 1987 and ensuing legislation through the Indian Gaming Regulatory Act of 1988. Both effectively paved the way for the widespread adoption of casinos as a tool for tribal economic autonomy and as a source of steady income for tribal governments to finance public expenditures and accumulate political expertise (Mason 2000). Political scientists have largely focused on the latter, showing how tribal gaming revenues have been used for greater access to federal government through lobbying (Mason 2001, Boehmke and Witmer 2002, Wilkins 2002, Light and Rand 2005, Bruyneel 2006) or through bargaining power and increased interdependence (Evans 2011, Kessler-Mata 2017). Economists have examined how casinos with per-capita payments have increased tribal citizen incomes, which in turn has been linked to greater intergenerational political participation (Akee et al. 2020). Yet little is known about how casinos and their resulting per-capita payments affect tribal governance and decision-making.

We investigate tribal governments' restrictions of economic activity during the COVID-19 pandemic as a particularly acute context of the health–wealth gradient. After adjusting for age, American Indians and

[1] For example, the roughly 16,000 Mandan, Hidatsa, and Arikara members of the Fort Berthold Indian Reservation living atop the Bakken basins of North Dakota have seen over $1.5 billion poured into the community as a result of the shale drilling rush since 2009. These windfalls financed new schools, senior citizen housing, health clinics, drug rehab centers, and a new $30 million cultural center (Brown and Fonseca 2021). Yet many in oil- and coal-producing tribes like the Mandan, Hidatsa, and Arikara Nation fear that this wealth will not translate into health improvements, citing either direct environmental impacts of production or the inequities of how revenues are spent across the community (Rainey 2017, Clarren 2018).

Alaskan Natives experienced the highest rates of COVID-19 cases, hospitalizations, and deaths when compared to White, Black, Hispanic and Asian populations through January of 2022.[2] We assess the decision to keep tribal casinos closed or open—a decision tribes can make regardless of state-level lockdown policies—as a function of whether gaming revenues are distributed as per-capita payments. Our theoretical intuitions build on the health–wealth gradient framework to specifically examine short-run tradeoffs between health safety and casino profit outcomes. At the height of the COVID-19 pandemic, this dilemma became painfully severe for tribal governments operating casinos: keep gaming facilities open but risk the spread of disease to the community or shutter casinos but risk economic collapse. For instance, in April 2020, elected leaders of the Sycuan Band of the Kumeyaay Nation faced considerable pressure from citizens to reopen the doors of its casino, which provides upwards of 80% of the government's revenue and directly funds tribal schools, health clinics, housing, infrastructure, and general public services (Mapp 2020). The Sycuan Band of the Kumeyaay Nation was far from the only tribe facing this health-wealth tradeoff, as casinos account for the lion's share of most tribal government budgets and political influence (Crepelle 2021).

At one end, the decision to open casinos during the pandemic can maximize tribal government revenues and individual employment while risking public health outbreaks. At the other end, keeping casinos closed will reduce health risks to the community but hinder government revenues and community employment. We hypothesize that the existence of per-capita payments impacts decision-making dynamics, changing the weight that tribal leaders place on each outcome along the possibility frontier. Per-capita payments—which serve as levers of accountability between tribal citizens and their governments—influence tribal leaders' economic decisions given constituent pressures to maintain the flow of income that would otherwise be lost if casinos remained closed. Absent these payments, constituent pressure will be to keep casinos closed given a weaker link between casino profits and improving health and individual wellbeing.

Our empirical assessments analyze the restriction of economic activity by all casino-operating tribal governments in the United States since the start of the COVID-19 pandemic in March 2020. To measure economic restriction, we develop an original database of the operating status of 443 Indian casinos. To measure per-capita payments, we use an existing database of per-capita distributions of gaming revenues (Malinovskaya 2020). Our causal identification strategy relies on the conditional exogeneity of a tribal government's decision to issue per-capita payments—a decision made at least 13 years prior to the onset of the pandemic—with respect to the operating status of casinos during the pandemic. We further assess the extent to which casino operating status is determined by a host of demographic, economic, and geographic characteristics of the Indian country in which these casinos operate.

Our preliminary findings highlight the importance of per-capita payments. Casinos governed by per-capita payments were open 17 to 29 percent longer than casinos lacking per-capita payments. These findings are robust to controlling for casino size, state fixed effects, and reservation population size and income, all measured before the COVID-19 pandemic, as well as a sensitivity analysis for the impacts of other potential omitted variables. We also find that larger casinos closed for fewer days, a result consistent with tribes favoring continuing revenue on reservations where the economic tradeoff between health safety and revenue is most sharp.

Our research makes three contributions to the existing literature on both American Indian governance and the broader study of policy decisions during economic crises. First, in framing the decision to restrict economic activity as a choice along the production possibility frontier, we add new insights into the study of decision-making constraints facing tribal governments in the United States—or what Laura Evans

[2] These data come from the CDC, Figure 2 at https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-cases-and-deaths-by-race-ethnicity-current-data-and-changes-over-time/.

refers to as the "dilemma of harnessing the potential of vulnerable government" (Evans 2011, p. 663). Second, we illustrate the importance of per-capita payments not only as a distributive policy tool but also as a fundamental governance linkage between tribal governments and their citizens. In doing so, we highlight the unique responsiveness of casino-operating tribal governments, which turned to gaming as one of the only viable options to generate fiscal revenue in the face of constrained sovereignty over taxation of property and citizen income (Fletcher 2007). Finally, we provide a new empirical assessment of local politics during the pandemic. Our analysis contributes to the nascent literature on lockdown policies to find rich variation in local government responses in the face of existing state- and national-level laws (Hale et al 2020).

**A brief overview of per capita payments and the health-wealth gradient**

Tribal per-capita payments began during the 1880s as the result of the federal government liquidating tribal assets and disturbing them to tribal citizens.[3] Distributing all tribal assets to the tribe's citizens was a means of terminating tribal existence. However, the origin of contemporary tribal per-capita payments is the federal government's tribal self-determination policy. Inspired by this policy, tribes used their sovereignty to open casinos on their land and create other tribally owned enterprises. Revenues from tribal businesses were used to fund tribal government operations, but many tribes also started using tribal business profits to make direct per-capita payments to the tribe's citizens.

Per-capita payments have become a complex issue for tribes. Tribal citizens usually welcome per-capita payments, and tribal citizens can use per-capita payments to address their own personal needs (i.e., by buying private goods such as food, shelter, education, and entertainment). Providing per-capita payments to citizens also reduces opportunities for political cronyism as citizens all receive equal shares of tribal profits. Additionally, per-capita payments give tribal citizens a direct stake in tribal economic welfare, so per-capita payments may increase tribal citizen civic engagement. On the other hand, per-capita payments reduce funds available for public goods such as cultural activities, law and order, and community infrastructure. If constituent demand for private goods is more immediate and pressing, or if constituent trust in tribal government is low, then politicians may be reluctant to propose reducing per-capita payments and consider it a losing issue. Per-capita payments can also create dependency among recipients and this could contribute to reliance on such payments for consumer debt and regular consumption patterns. Such reliance would make the population vulnerable to unexpected decreases in per-capita payments such as those resulting from economic downturns.

To fix ideas on the possible importance of per-capita payments in the context of the health-wealth gradient, consider Figure 1, which illustrates tradeoffs and median voter preferences between casino income and health safety. The straight line depicts the possibilities frontier between having more tribal casino profit on one hand, and less COVID-19 exposure risk on the other hand. (Less exposure risk is equivalent to more health safety). There is obviously no tradeoff for tribes lacking casinos, and the height of the casino profit intercept depends on the size of the casino and the extent of regional gaming demand and competition. The slope of the frontier could vary temporarily, based on regional changes in COVID-19 risk. The frontier is depicted at the tribal level, which is the unit of decision making in our empirical analysis because individuals cannot unilaterally determine casino profit or public health risk.

[3] The first two paragraphs in this section draw from Crepelle (2020) and the references contained therein.

The curved lines represent the indifference curves of the median voter of Tribe A, B, and C. These depict preferences towards casino profits and health safety: for example, the median voter in Tribe A would have to be compensated with more health safety than the median voter in Tribe C to support a policy that lowered casino profits. This framing assumes that median voters care about casino profits because they are claimants to those profits. This is obviously true when the tribe distributes per-capita payments. When the tribe does not, the median voter—who is a tribal citizen—is nevertheless a claimant to public goods provided by tribal government (using casino profits) such as schools, parks, recreational centers, cultural facilities, and language classes.

In the Figure 1 framework, the tribal government takes as given its possibility frontier and then chooses a set of casino policies (e.g., how long to stay open and at what capacity) to balance casino profits and health safety. Here we assume it does so to best satisfy the median voter. Therefore, the median voter's preferences determine whether the casino will operate robustly during the pandemic, as in Tribe A, or operate very cautiously, as in Tribe C.[4]

Will the existence or lack of per-capita payments affect the preferences of the median voter? To evaluate this question it is useful to consider what casino profits provide for tribal citizens. When the tribe distributes per-capita payments, the profit is given to citizens in paychecks that citizens can use to purchase *private goods* such as food, clothing, transportation, shelter, and entertainment. When the tribe does not distribute per-capita payments, the profit is translated into the production of *public goods* such as those described above.

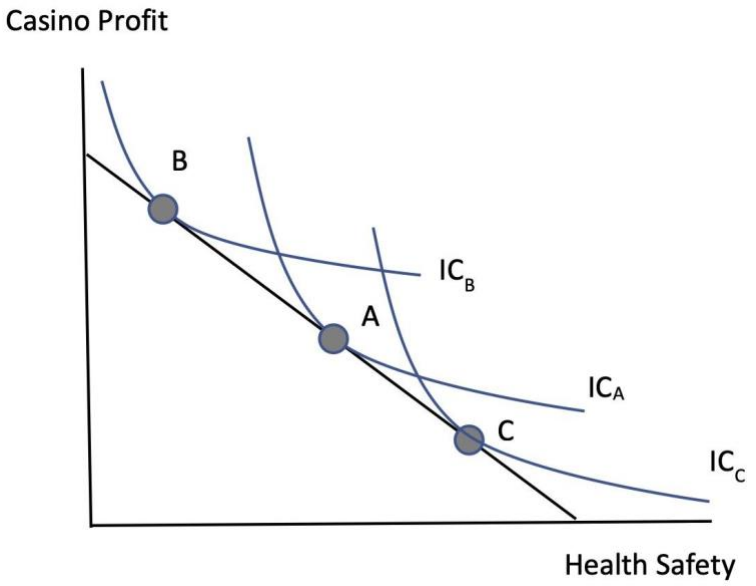


**Figure 1. Tradeoffs and Median Voter Preferences between Casino Income and Health Safety.** *The straight line depicts the possibilities frontier between tribal casino income and minimized risk of COVID-19 exposure, expressed as "Health Safety." The curved lines depict different indifference curves of the median tribal citizen. The points A, B, and C illustrate optimal choices.*

[4] It is possible that factors other than the median voter will sway tribal decision making, such as bureaucratic pressure and the structure of political institutions which can result in expenditure decisions that stray from the preferences of the media voter (Romer and Rosenthal 1979). Tribes operate as democracies, however, and this does imply that governments will ultimately be bound to the median voter. As Randall Holcombe has noted, "Just because the median voter model is not descriptive of every political market does not mean that it cannot provide a solid foundation for the analysis of public sector demand" (Holcombe 1989, 115).

If individuals are less willing to give up private goods for health and safety, then the steeper indifference curves of median voter B best reflect preferences under per-capita payments. This scenario strikes us as the most intuitive. Indifference curves will be steeper when there are few substitutes for the goods foregone when casinos profits diminish. There are few substitutes for private goods such as food and shelter; income foregone from a reduction in per-capita payments will necessarily limit their consumption when borrowing constraints exist as is common on reservations because individual access to credit is limited (Parker 2012, Catteneo and Feir 2020, Dippel et al. 2021). Moreover, dependency on per-capita payments will influence lifetime consumption plans under the permanent income hypothesis (e.g., Hall 1978) implying that casino shutdowns are more likely to put tribal citizens in debt under per-capita payments if those citizens made spending decisions that (rationally) did not anticipate a rare global pandemic event.[5]

By contrast, the indifference curves of the median voter C may best reflect the preferences of the median voter in a tribe that does not distribute per-capita payments. While there may be few substitutes for public goods provided by the tribe, the consumption of those goods may not be as pressing or time sensitive as the consumption of private goods such as food and shelter. Moreover, the tribal government likely faced fewer borrowing constraints (when compared to individual tribal members) during the COVID-19 pandemic, and borrowing would allow continued public good provision.

The framework also suggests a substitution effect in the consumption of public versus private goods. Extra income from per-capita payments can be used to cover expenses for services that would otherwise have been delivered by the state. Prior work on the transfer of remittances—income that is regularly sent to individuals from relatives living abroad—identifies a similar substitution effect for state provisions and welfare goods (Bravo 2009, Germano 2013). The effect is pronounced enough such that increased ability to pay for healthcare and education using remittance income has led to declines in government expenditure on health and schooling services (Abdih et al 2012, Ahmed 2013).[6]

With less reliance on the state for public services, individuals have less reason to hold their government accountable if these services are not properly delivered. In its place, political discourse shifts from public service accountability to loss aversion: maintaining the steady flow of cash transfers rather than ensuring adequate delivery of social services (Mahdavi 2020). Governance therefore becomes transactional, a pattern which scholars have noted in the context of repeated cash transfers from Alaska Native Corporations (Hirschfield 1991, Anders and Anders 1986). Applying this logic to gaming revenues, we might expect citizens to primarily hold tribal governments to account for continued delivery of per-capita payments. With less accountability to their constituents—especially in matters not pertaining to the delivery of per-capita payments—tribal governments will be less constrained on maximizing government income through unrestricted economic activity, even if this poses a risk for community health outcomes.

In summary, the tight linkages between per-capita payments and private goods consumption suggest that tribal citizens under per-capita payments are likely to prefer a balance that leans more towards casino profits and less towards health and safety. This is ultimately an empirical question, however, and we will

[5] According to the hypothesis, consumers estimate their ability to consume in the long run and then set current consumption patterns as a proportion of that ability.

[6] While the theory is framed as a comparison of preferences, we are actually arguing that median voter preferences for casino policies differ because the relative prices of public versus private goods differ depending on whether per-capita payments are made. The median voter's preference for casino policy is therefore fundamentally determined by how the presence of per-capita payments on relative prices.

turn to the data to assess how the actual decisions of tribal governments varied with the use of per-capita payments.

## Data & Methods

Our dependent variable is casino closure during the pandemic, measured as the number of days a given casino remained closed between February 20, 2020, and February 20, 2022. We assembled this information using a daily panel from Casino City's Gaming Directory, which tracked the operating status of 2,225 gaming properties in the U.S., including tribal casinos.[7] We then matched property locations with counties and tribal reservations based on geocoded addresses.

Figure 2 shows the geographic variation in tribal casino closures during the 24-month period of study. There is considerable variance across these facilities: some casinos, such as the Sandia Resort and Casino (Albuquerque, NM) and the Ho-Chunk (Tomah, WI), remained closed for over 470 days, in contrast to others like the Coushatta (Kinder, LA) and the Kickapoo (Harrah and Shawnee, OK) that reopened after only being closed for two months.[8]

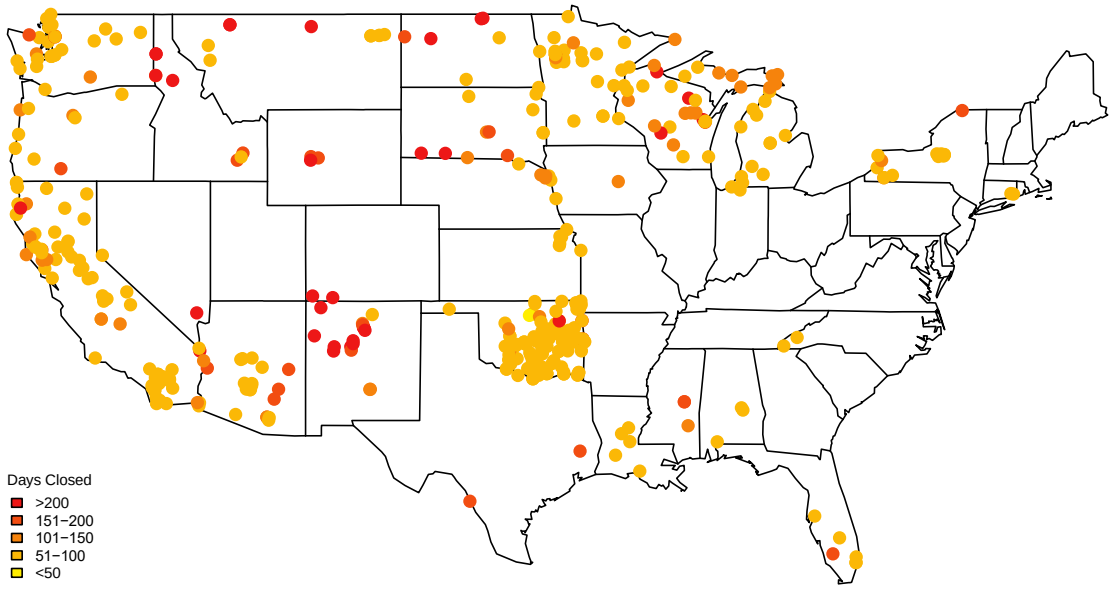


**Figure 2. Casino closures for Indian gaming facilities during the COVID-19 pandemic**. *Tribal casinos plotted as circles with increasing gradients of red for longer closures since February 20, 2020. Based on data from Casino City's Gaming Directory, last accessed on March 1, 2022. This map excludes properties labeled as Bingo Halls, Dog Tracks, and Race Tracks whether or not operated by Tribes.*

[7] Data was scraped from the Casino City website gamingdirectory.com on February 20, 2021, and then again on February 20, 2021. We cross-validated several of these properties with their own casino websites to assess accuracy of closure information from Casino City. The data set categorizes the following properties: Bingo Hall, Card Room, Casino Cruise, Commercial Casino, Dog Track, Dog Track Racino, Horse Track, Horse Track Racino, Indian Casino, and Off Track Betting Facility. Our analysis focuses on the property defined as "Indian Casino."

[8] A number of casinos have censored closure ranges because they were built after the pandemic began, such as the Ponca Tribe of Oklahoma's Fancy Dance Casino in September 2020.

To measure per-capita payments, our primary independent variable, we draw on a database compiled by Malinovskaya (2020) using information from the U.S. Department of Interior, scholarly reports, and local media sources.[10] Because data on per-capita amounts are limited (often by design), we instead rely on a binary indicator for whether a tribe has ever distributed per-capita payments from gaming revenues. This results in distributed per-capita payments for 129 tribes, which we then match to the casino-level database described above. Figure 3 maps the distribution of all tribal casinos based on whether or not tribes distribute per-capita payments from these properties.[11] For example, the Santa Ynez Band of Chumash Indians operate the Chumash Casino in California, distributing monthly per-capita payments based on gaming revenue from this facility.

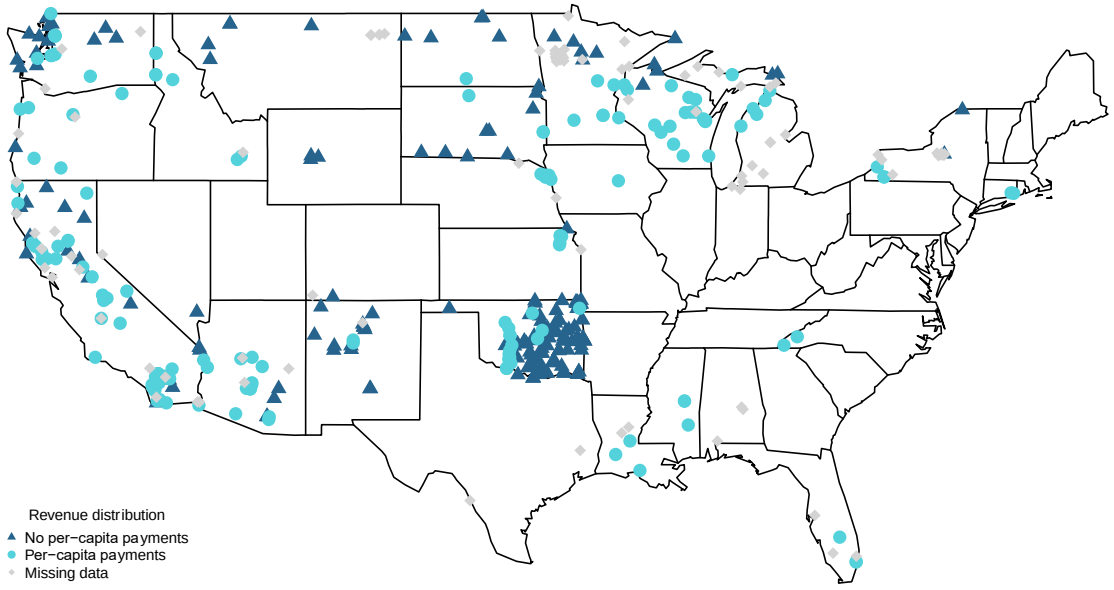


**Figure 3. Tribal gaming facilities in the contiguous U.S.** *Dark blue triangles represent tribal casinos without per-capita payments and light blue circles represent tribal casinos with per-capita payments. Small grey diamonds show tribal casinos with missing data on revenue distribution systems. Based on data from Malinovskaya (2020) matched with the Casino City Gaming Directory full list of all operating casinos in the U.S. See note in Table 1.*

*Visualization of Differences in Days Closed*

To motivate the empirical analysis, we begin with a kernel density plot that compares the distribution of Days Closed for casinos with and without per-capita payments. Figure 4 shows that casinos with per-capita payments were closed for shorter periods on average. While casinos without per-capita payments show a wide range of closure durations, casinos with per-capita payments were predominantly closed for fewer than 100 days. Of course, these distributions do not account for potential confounders at the casino, community, or state levels, such as size, employment, income, and state opening regulations. We now turn to regression analysis in the following section to control for factors such as these.

[10] A full list of sources used by Malinovskaya can be found here: https://drive.google.com/file/d/1R0zvteJoxRT2Erc2BWM7H0d9bg2-AR4u/view.
[11] Appendix Figure A1 shows this distribution alongside commercial casinos.

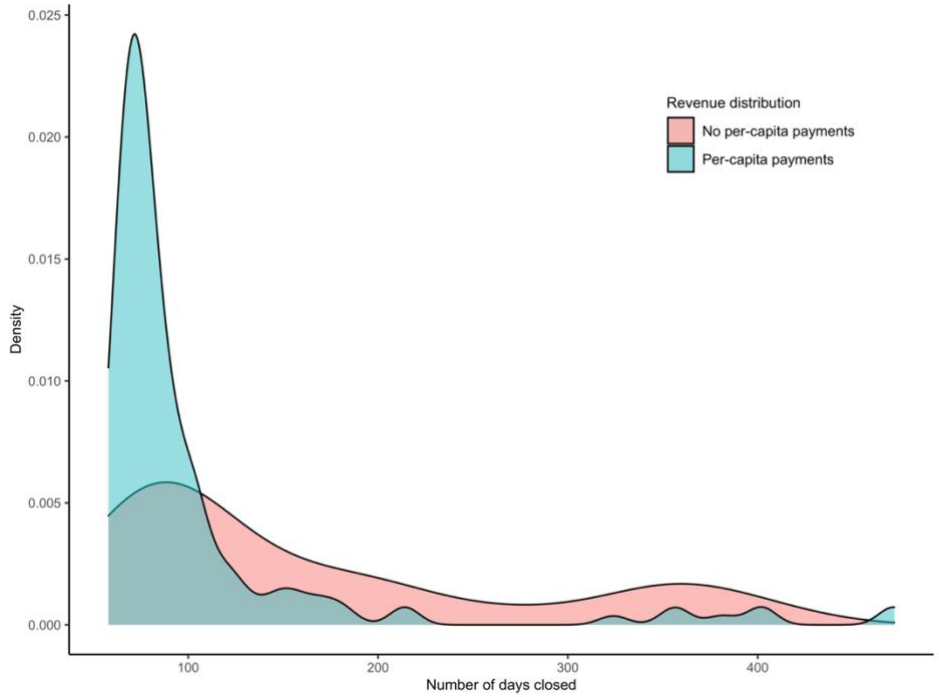


**Figure 4. Distribution of closure duration for tribal casinos with and without per-capita payments.** *Kernel density of* Days Closed *for tribal casinos with (blue) and without (pink) per-capita payments. See Appendix Figure A2 for a comparison to casino closures including commercial casinos.*

*Regression Analysis*

We specify the following multivariate model to estimate the relationship between the existence of per-capita payments and the decision to reopen tribal casinos after the onset of the pandemic:

$$y_{crs} = \alpha + \beta d_c + \gamma X_c + \delta Z_r + \theta_s + \epsilon_{crs}$$

where $y$ is the number of days casinos remained closed (*AllDaysClosed*) for casino $c$ on reservation $r$ in state $s$; $d$ is a binary indicator for per-capita payments (*PerCapInd*); $\boldsymbol{X}$ is a matrix of casino-level covariates; $\boldsymbol{Z}$ is a matrix of reservation-level covariates; and $\theta$ represents state-level fixed effects. The latter captures a range of factors that vary at the state level that are difficult to measure reliably but change slowly (if at all) over the 24-month time period under study. One such factor is job insurance and state unemployment policies: tribes in states with minimal protection for unemployed workers would be under greater pressure from constituents to reopen casinos and other economic activities.

The casino level covariates include measures for the size of the casino on February 2, 2020 (square footage, number of gaming machines, and employment) to account for its economic importance prior to COVID-19. As in Figure 1, a larger casino means more profits are at stake and hence a sharper tradeoff between profit and COVID-19 safety. The reservation covariates include the population and income per-capita of the reservation, both measured before COVID-19 by the 2014-2018 American Community Survey (ACS) reports.

Identifying the causal effect of per-capita payments on casino reopenings with this design is hindered by the lack of random assignment. That said, selection on observable covariates plus state-fixed effects

covers a wide range of plausible threats to endogeneity given the origins of per-capita payments. It is unlikely that the factors which contributed to the historical decision to obtain federal approval of a tribal revenue allocation plan systematically affect the decision to restrict economic activity during the pandemic, beyond the factors explicitly modeled here. For example, the most populous tribes have historically opted against per-capita revenue allocations. One justification for this choice among the Navajo Nation is that payments would be relatively small given so many tribal members, and that instead "the money would better be used in providing services or even put away in the bank where it could earn interest."[12] Controlling for both tribal size and casino size in our models thus captures some of the potential confounding effects given that such factors would likely influence decisions to reopen casinos during the pandemic. Beyond these controls, we use a sensitivity analysis developed by Cinelli and Hazlett (2020) to assess the impact of any remaining unobserved confounders on our regression estimates.

**Summary Statistics and Results**

Table 1 shows summary statistics. There were 443 Tribal Casinos as of February 2, 2020. About six percent closed at some point during the pandemic and have never reopened. For the 94 percent that reopened, the casinos were closed an average of 110 days with a minimum of 17 and maximum of 472 days between February 2, 2020 and February 20, 2022. If we topcode the data at 472 days for casinos that never reopened, then the mean is 103 with a minimum of 17 days. Approximately 50 percent of the casinos offered payments per-capita, based on Malinovskaya (2020). We log *All Days Closed* in some specifications to address the long right-side tail in the distribution and to minimize the influence of outliers.

| | **Obs.** | **Mean** | **St. Dev.** | **Min** | **Max** |
|---|---|---|---|---|---|
| All Days Closed | 444 | 110.39 | 78.75 | 17 | 472 |
| Per-Capita Payments | 277 | 0.51 | 0.50 | 0 | 1 |
| Gaming Machines | 439 | 774.89 | 948.17 | 5 | 8543 |
| Employees | 365 | 587.67 | 920.55 | 2 | 8400 |
| Casino Square Footage | 367 | 50794.0 | 54610.3 | 100 | 390000 |
| Am. Indian Population on Reservation | 280 | 3518.1 | 14135.4 | 0 | 166395 |
| Am. Indian Per Capita Income on Res. | 263 | 20365.1 | 21076.1 | 8321 | 246692 |

**Table 1. Sample Summary Statistics.** *The outcome variables and the information on casino size and employment were constructed from the Casino City's Gaming Directory. The per-capita payment indicator comes from Malinovskaya (2020) and the information on American Indian reservation populations and incomes per-capita come from the American Community Survey (ACS) records average over 2014-2018. Although there were 443 Tribal casinos operating as of Feb. 2, 2020, we were unable to match every variable with every casino. The limitation on matching is due to some casinos operating in tribal areas that were either not federally recognized in Feb. 2020, or that were not listed in Malinovskaya (2020) and the American Community Survey (ACS) profiles.*

[12] Bill Donovan, "50 Years Ago: Navajo Rejects Idea of Per-Capita Payments," *Navajo Times* (May 28, 2015), https://navajotimes.com/50years/50-years-ago-navajo -rejects-idea-of-per-capita-payments/

Table 2 shows estimates of the regression model using the natural log of the number of days closed. (We log the dependent variable to reduce the effect of outlier observations but the results from specifications that are not logged are qualitatively similar). The even columns include state fixed effects and the odd columns do not. Columns 3 and 4 control for reservation level American Indian populations and incomes per capita, both measured as the average over 2014 and 2018. Column 5 controls for the average number of days closed for non-tribal casinos operating in the same state as discussed in more detail below. The standard errors are clustered at the reservation level to account for the few cases where multiple casinos operate on a single reservation and may be closed or open for reasons that are correlated within reservations.

The Table 2 estimates reveal a strong negative relationship between the number of days closed and the use of per-capita payments. Casinos associated with per capita payments were open longer over Feb. 20 2020 through Feb. 20, 2022. The magnitude of the coefficients suggests the relationships are economically meaningful in terms of foregone casino revenue. Coefficients in Column 1, for example, translates into a $e^{-0.338} - 1$ =29% decrease whereas Columns 2 translates into a $e^{-0.188} - 1$ =17% decrease in days closed.

Larger casinos, measured by the number of gaming machines, tended to be closed for shorter durations. Columns 1-2 indicate that a 10% increase in gaming machines is associated with about a one percent decrease in days closed. These results are consistent with tribes wanting to avoid the sharper economic loss that results from closing larger casinos.[13]

| | Dependent Variable is ln(All Days Closed) | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Per Capita Payments | -0.338*** | -0.188** | -0.299*** | -0.205** | -0.322*** |
| | (0.096) | (0.083) | (0.105) | (0.098) | (0.107) |
| ln(Gaming Machines on Feb. 2, 2020) | -0.116*** | -0.081** | -0.102*** | -0.079** | -0.006 |
| | (0.038) | (0.031) | (0.038) | (0.032) | (0.032) |
| ln(Am. Indian Population, 2014-18) | | | 0.072*** | 0.014 | |
| | | | (0.026) | (0.029) | |
| ln(Am. Indian Inc. Per Capita, 2014-18) | | | -0.058 | -0.076 | |
| | | | (0.077) | (0.063) | |
| ln(Avg Days Closed for non-Tribal Casinos in same state) | | | | | -0.247** |
| | | | | | (0.113) |
| State Fixed Effects | No | Yes | No | Yes | No |
| Observations | 226 | 226 | 210 | 210 | 71 |
| R-squared | 0.191 | 0.543 | 0.260 | 0.547 | 0.132 |

**Table 2. Regression Estimates.** *Standard errors, which are clustered at the reservation level, are shown in parentheses. * p<0.1, ** p<0.05, *** p<0.01.*

[13] Here we measure casino size with the number of gaming machines to maximize the number of observations. The coefficients on per-capita payments are similar if we add square footage and employment.

Columns 3 and 4 includes two reservation-level covariates: the natural logs of the population of American Indians on reservations and the income per capita of the Indian population on these reservations, both estimated by the ACS over 2014-2018. Adding these variables decreases the number of observations but adds important controls for population size and income. The results indicate that adding the reservation-level controls has little effect on the relationship between per-capita payments and casino closures. Here again, casinos on reservations with per-capita payments were open between 19 and 28 percent longer than casinos on reservations lacking per-capita payments. There is some evidence that reservations with larger American Indian populations—and hence more exposure to COVID-19—tended to stay closed longer but this finding is not robust to the inclusion of state fixed effects. Moreover, conditional on the use of per-capita payments, the size of casinos, and the size of the reservation population, the per-capita income of reservations is uncorrelated with closure policy.

Column 5 controls for the average number of days that non-tribal casinos operating in the same state were closed between Feb. 20, 2020 and Feb. 20, 2022. The negative coefficient implies that 10% increase in the average closing days for non-tribal casinos led to a 2.5% decrease in the number of days a tribal casino was closed. This finding is consistent with tribal casinos staying open longer to take advantage of additional profit opportunities resulting from the closure of a competitor casino. These findings are calculated from a small sample of 71 tribal casinos, because states that have tribal casinos but not non-tribal casinos are necessarily excluded from the analysis.

*Sensitivity analysis*

Is the per-capita effect driven by omitted variables bias? It could be, for instance, that an unobserved confounder accounts for both variation in the origins of per capita payments and the decision to reopen tribal casinos, biasing the estimated relationship. While it is impossible to rule out such confounding factors with certainty with our research design, we can address the following question: how strong would these confounders have to be in order to change the conclusion that per capita payments affect casino closures during the pandemic?

Cinelli and Hazlett (2020) derive a sensitivity analysis framework that answers this question by simulating a hypothetical confounder that explains variation in both the treatment and outcome (conditional on observed covariates) and assessing the extent to which this confounding alters the estimated treatment effect. We compare a hypothetical confounder to the strongest observed predictors (empirically and theoretically) of casino closures and per capita payments: casino size (gaming machines) and reservation size (American Indian population). This follows from the idea that larger tribes were less likely to adopt per capita payments (Crepelle 2020), while larger casinos were less likely to remain closed during the pandemic. In other words, we estimate the confounding effect of a hypothetical omitted variable that would have the same impact or greater on casino closures as casino size or reservation population.

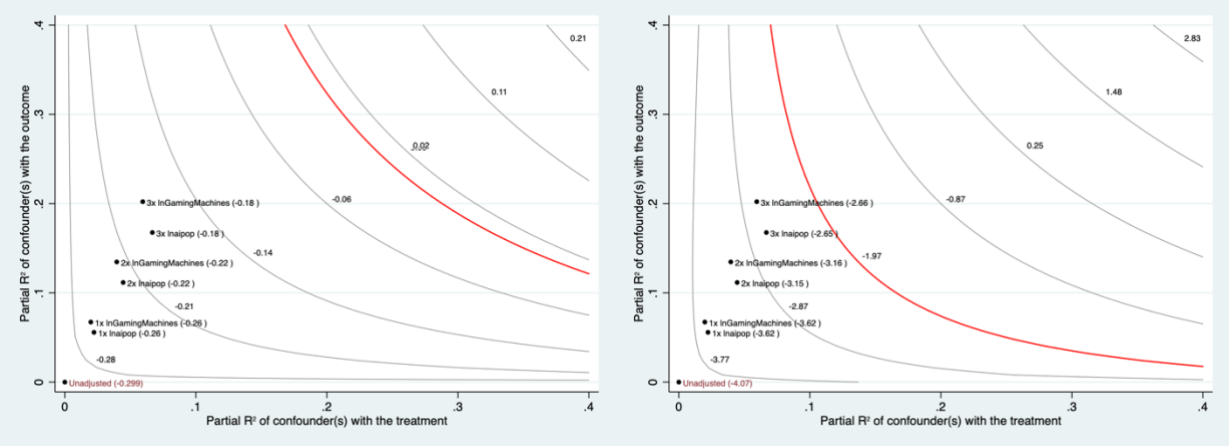


**Figure 5. Sensitivity of results to potential omitted variables.** *Sensitivity contour plots of point estimate (left) and t-value (right) of the coefficient on per capita payments in Model 3 of Table 2. Each black dot indicates the expected change to the estimated value from the addition to the model of an unobserved confounder with three times (3x) the explanatory power of logged gaming machines and reservation population, the two strongest predictors of per capita payments and casino closures that we can observe.*

Results from this sensitivity analysis indicate that any unobserved confounder would need to be more than THREE times as strongly associated with casino closures and per capita payments as casino size or reservation size to fully explain away the point estimate and cross the threshold of statistical significance. Figure 4 shows the change in effects from adding such unobserved confounders to the model: a confounder with three times the predictive power of casino size (gaming machines), for instance, changes the coefficient estimate of per capita payments on number of days closed from -0.299 to -0.180 (left panel), which remains significant at the 5\% level with a *t*-value of -2.66 (right panel).[14]

## Conclusion

Our study of tribal casino governance during the COVID-19 health crisis brings new evidence to the literature on factors affecting the governance of health-wealth tradeoffs. The results here are consistent with the theory that per-capita payments from gaming revenues play an influential role in how tribal governments balance economic interests with community health priorities. Across tribal casinos in the United States in operation prior to the onset of the COVID-19 pandemic in March 2020, we find that casinos that distribute per-capita payments were open between 17 and 29 percent longer during the

[14] Specifically, the partial R2 of the treatment with the outcome indicates an extreme confounder (orthogonal to the covariates) that explains 100% of the residual variance of the outcome, would need to explain at least 7.49% of the residual variance of the treatment to fully account for the observed estimated effect. The so-called "robustness value", here set to q = 1, indicates that unobserved confounders (orthogonal to the covariates) that explain more than 24.69% of the residual variance of both the treatment and the outcome are strong enough to bring the point estimate to 0 (a bias of 100% of the original estimate). Conversely, unobserved confounders that do not explain more than 24.69% of the residual variance of both the treatment and the outcome are not strong enough to bring the point estimate to 0. Furthermore, unobserved confounders (orthogonal to the covariates) that explain more than 13.61% of the residual variance of both the treatment and the outcome are strong enough to bring the estimate to a range where it is no longer 'statistically different' from 0 (a bias of 100% of the original estimate), at the significance level of alpha = 0.05. Conversely, unobserved confounders that do not explain more than 13.61% of the residual variance of both the treatment and the outcome are not strong enough to bring the estimate to a range where it is no longer 'statistically different' from 0, at the significance level of alpha = 0.05.

pandemic than casinos without per-capita payments. This finding is consistent with decisions favoring continued economic activity where the tradeoffs between revenues and health outcomes are sharpest. These results are robust to the inclusion of various factors at the casino, reservation, and state levels, as well as potentially omitted but unobserved confounders via a simulation-based sensitivity analysis.

More generally, the findings suggest that per-capita payments will sharply change government priorities to lean more towards economic activity. The implication is that per-capita payments do not only affect the distribution of revenues from state-owned enterprises, they fundamentally affect the size of revenue flows from those enterprises. This may have implications for how much communities—such as American Indian Nations—want to pursue disruptive energy development such as that for oil, gas, wind and solar. Our findings support the intuition that communities will be most aggressive when natural resource dividends are paid directly to constituents (Hammond 2012), suggesting that prospects for energy development are very much linked to distributional choices. We leave these important issues for future research.

**References**


Abdih, Yasser, Ralph Chami, Jihad Dagher and Peter Montiel. 2012. Remittances and institutions: Are remittances a curse? *World Development* 40(4):657–666.

Ahmed, Faisal Z. 2013. Remittances deteriorate governance. *Review of Economics and Statistics* 95(4): 1166–1182.

Akee, Randall, William Copeland, John B. Holbein, and Emilia Simeonova. 2020. Human capital and voting behavior across generations: Evidence from an income intervention. *American Political Science Review* 114(2): 609-616.

Anders, Gary C. and Kathleen K. Anders. 1986. Incompatible goals in unconventional organization: The politics of Alaska Native corporations. *Organization Studies* 7(3):213–233.

Bates, Robert H. and Da-Hsiang Donald Lien. 1985. "A Note on Taxation, Development, and Representative Government." *Politics & Society* 14(1): 53–70.

Boehmke, Frederick J. and Richard C. Witmer. 2012. Indian nations as interest groups: tribal motivations for contributions to U.S. senators. Political Research Quarterly. 65(1): 179–91

Bravo, Jorge. 2009. Emigration and political engagement in Mexico. *Politica y Gobierno* 273–310.

Bruyneel, Kevin. 2006. The Colonizer Demands its "Fair Share," and More: Contemporary American Anti-Tribalism from Arnold Schwarzenegger to the Extreme Right. *New Political Science* 28:3: 297-321.

Cattaneo, Laura and Donna Feir. 2020. The Price of Mortgage Financing for Native Americans. Journal of Economics, Race, and Policy. November.

Cinelli, Carlos and Chad Hazlett. 2020. Making sense of sensitivity: extending omitted variable bias. *Journal of the Royal Statistical Society Series B* 82(1): 39-67

Crepelle, Adam. 2020. The tribal per capita payment conundrum: Governance, culture, and incentives. *Gonzaga Law Review* 56(3): 483-528.

Crepelle, Adam. 2021. Tribes, Vaccines, and COVID-19: A Look at Tribal Responses to the Pandemic, 49 Fordham Urban Law Journal 49(1): 31-64.

Deloria, Vine, Jr. 1970. *We Talk, You Listen: New Tribes, New Turf*. Lincoln: University of Nebraska Press.

Dippel, Christian, Bryan Leonard, and Marc Roark. 2021. Secured Transactions Laws and Economic Development on American Indian Reservations. *AEA Papers and Proceedings* 111(May)

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper Collins.

Evans, Laura E. 2011. Expertise and scale of conflict: Governments as advocates in American Indian politics. *American Political Science Review* 105(4): 663-682.

Evans, Laura E. 2014. Tribal-State Relations in the Anglosphere. *Annual Review of Political Science* 17: 273-289.

Fletcher, Matthew L. M. 2007. Bringing Balance to Indian Gaming. *Harvard Journal on Legislation* 44(1): 39-96.

Germano, Roy. 2013. Migrants' remittances and economic voting in the Mexican countryside. *Electoral Studies* 32(4): 875–885.

Hale, Thomas, Noam Angrist, Rafael Goldszmidt, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster et al. 2021. A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour* 5(4): 529-538.

Hall, Robert E. 1978. Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence. *Journal of Political Economy* 86(1): 971-987.

Hammond, Jay. 2012. Diapering the Devil: How Alaska Helped Staunch Befouling by Mismanaged Oil Wealth: A Lesson for Other Oil Rich Nations. In *The Governor's Solution*, ed. Todd Moss. Brookings Institute Press chapter 2, pp. 5–54.

Hirschfield, Martha. 1991. The Alaska Native Claims Settlement Act: Tribal sovereignty and the corporate form. *Yale Law Journal* 101:1331.

Holcombe, Randall. 1989. The median voter model in public choice theory. *Public Choice* 61(2): 115-125.

Kessler-Mata, Kouslaa T., 2017. *American Indians and the Trouble with Sovereignty: A Turn Toward Structural Self-Determination*. New York: Cambridge University Press.

Light S A and KRL Rand. 2005. *Indian Gaming and Tribal Sovereignty: The Casino Compromise*. Lawrence: University Press Kansas.

Malinovskaya, Anna. 2020. Per capita distribution of gaming revenues & Gaming Compact first BIA approval dates. https://sites.google.com/cornell.edu/datarepository-nativeamericans/per-caps

Mapp, Lauren J. 2020. "Tribes face cultural, economic hardships amid coronavirus stay-home orders." *San Diego Union Tribune*. April 27.

Mason, W. Dale. 2000. *Indian Gaming: Tribal Sovereignty and American Politics*. Norman: University of Oklahoma Press.

Mason, W. Dale. 2001. Tribes, Casinos, and Hardball Politics: Indian Gaming and Its Impact on American Politics. *Gaming Law Review* 5(4): 365-372.

Mettler, Suzanne. 2018. *The Government-Citizen Disconnect*. Russell Sage Foundation.

North, Douglass C., and Barry Weingast. 1989. "Constitutions and Credible Commitments." *Journal of Economic History* 49: 802–32.

O'Brien, Sharon. 1989. *American Indian Tribal Governments*. Norman: University of Oklahoma Press.

Parker, Dominic P. 2012. The Effects of Legal Institutions on Access to Credit: Evidence from American Indian Reservations. Unpublished Manuscript.

Romer, Thomas, and Howard Rosenthal. 1979. The elusive median voter. *Journal of Public Economics* 12(2): 143-170.

Ross, Michael L. 2004. "Does Taxation Lead to Representation?" *British Journal of Political Science* 34(2): 229–249.

Wilkins, David E. 1997. *American Indian Sovereignty and the US Supreme Court: The Masking of Justice*. Austin: University of Texas Press.

Wilkins, David E. 2002. *American Indian Politics and the American Political System*. Lanham, MD: Rowman and Littlefield.

## Appendix Figures

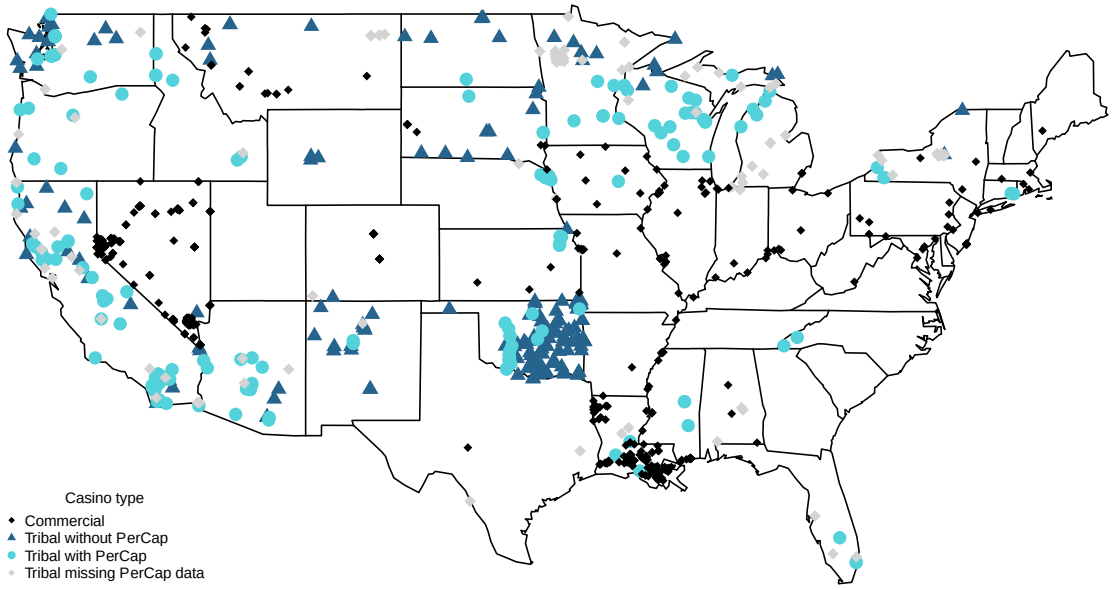


**Figure A1. Commercial and tribal casinos in the contiguous U.S.** *Small grey diamonds represent non-tribal casinos; dark blue triangles represent tribal casinos without per-capita payments; light blue circles represent tribal casinos with per-capita payments; small grey diamonds show tribal casinos with missing data on revenue distribution systems. Based on data from Malinovskaya (2020) matched with the Casino City Gaming Directory full list of all operating casinos and other gaming facilities in the U.S. See note in Table 1.*

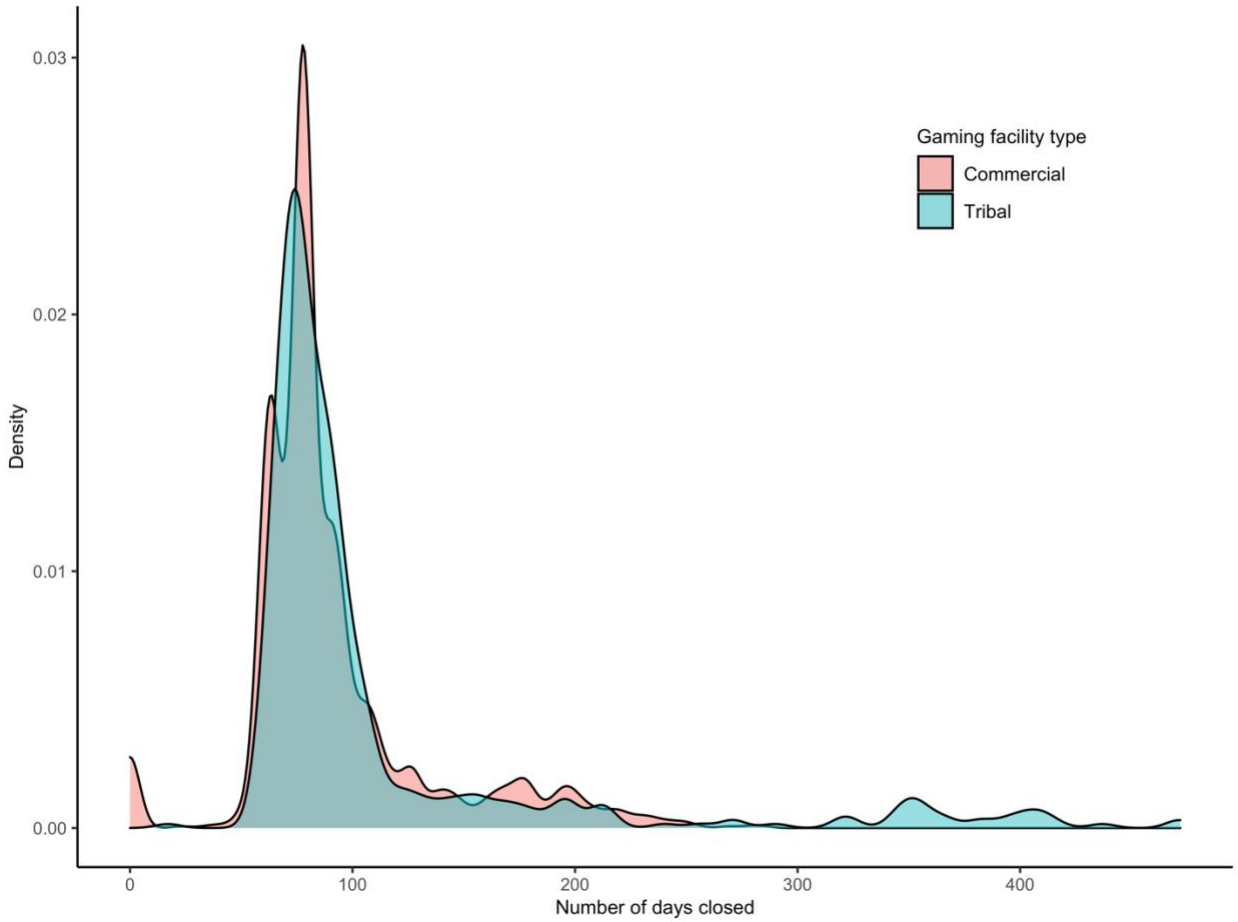


**Figure A2. Distribution of closure duration for tribal casinos and commercial casinos.** *Kernel density distributions of* Days Closed *for tribal casinos (blue) and commercial casinos (pink).*