A Game Worth Playing? The Distributional Effects of Casino Gambling: An Emphasis on Iowa

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ABSTRACT. This paper examines the distributional effects of casino gambling, with an emphasis on Iowa. The casino tax is found to be regressive, and regressivity increases with increased accessibility to casinos. Prevalence and costs of pathological and problem gamblers are discussed in detail. Evidence suggesting a positive correlation between casinos and bankruptcy rates is presented. Overall, it is found that casinos disproportionally harm poor individuals, non-whites (with the exception of Native Americans), and those living near casinos. Iowans must understand the equity implications of casino gambling in order to make informed policy decisions, including the county referendums in 2002.

I. Introduction

"Americans now spend more on various wagers than they do on theme parks, video games, spectator sports, and movie tickets combined" [*The Economist*, 1999, 27]. The face of gambling in the United States has changed dramatically in the past twenty-five years, going from legalization in one state to a nationwide industry. Currently, 48 states and the District of Columbia allow legalized gambling within their borders, causing expenditures on gambling as a percentage of personal income to rise from 0.30% in 1974 to 0.74% in 1997 [Ibid, 27].

As a whole, gambling has won acceptance by a large part of the American public, and the government has had no small role in this. Through lotteries and casino-style gaming, state and local governments can raise revenue and therefore have more dollars to spend on their constituents. The gaming industry has seen dramatic growth in the recent past, with 29 states now having some form of casinos within their borders, compared to only Nevada and New Jersey fifteen years ago.

Since casino gambling is relatively new to most states, many economists, government officials, and social and religious leaders have become concerned with its rapid growth in such a short period of time. How is this boom changing the economic structure of society, and which income groups are most affected? Gambling may very well have financial

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benefits for the state and community, but distributional issues must also be studied in order to conduct proper policy in the future.

No better state than Iowa exists for studying the affects of the recent rapid growth in the gambling industry. Iowa has become one of the premier gaming states with both riverboat and Indian Reservation gambling. Gambling has become very accessible to residents, and revenues from casino taxes have soared. However, the landscape of the industry in Iowa has the potential to change. The state recently placed a five year moratorium on the expansion and building of casinos in order to assess the impact of the industry on its economic structure. Furthermore, voters in counties currently housing casinos will get a chance to vote on a referendum in November 2002 to discontinue state-allowed casino operations within their borders. Distributional issues must be explored in order to make an informed decision on policy issues regarding the fate of the gaming industry in the state.

II. History

Prior to the 1970's, social stigma surrounded gambling in almost every state and was illegal everywhere except Las Vegas and Atlantic City. In 1963, the Iowa Supreme Court ruled that some pinball machines constituted illegal gambling since an extra ball was rewarded on the basis of an element of chance. This seemingly ridiculous ruling prompted the repeal of Article III, section 28 of the Iowa Constitution, which prohibited "a chance for a prize for a price." [Iowa General Assembly, 2000, II: para. 2] This decision and others like it in other states opened the doors for bingo and other games of chance to spread.

Relaxing of the stigma and negative attitudes towards gambling, evident in the demand for government-sponsored lotteries and bingo by nonprofit groups such as churches, prompted the beginning of commercialized Indian reservation gaming in the 1970's [Hsu, 1999, 46]. Soon, Native Americans began raising the stakes of their games above state-regulated limits in order to attract people and raise revenues. A series of court cases were lost by the states and led to gaming without regulation on reservations across America. Clearly regulation was in order, and the federal government soon stepped in.   The Indian Gaming Regulatory Act of 1988 emerged as the key federal legislation to regulate gaming on Indian lands. Section 2701(5) of the IGRA gives the

tribes "the exclusive right to regulate gaming activity on Indian lands if the gaming activity is not specifically prohibited by federal law and is conducted within a state which does not … prohibit such gaming activity." The act provided for a means of limited state control and ensured Indian rights at the same time. The state government must negotiate in good faith with each tribe to establish a compact concerning the rules and regulations of the gaming activity to be held on the reservation.

Iowa abides by the policy set forth in the IGRA in negotiations with its native tribes. Iowa currently houses three tribal reservations with casino activities: the Sac and Fox Tribe on the Mesquaki land near Tama, the Winnebago Tribe of Nebraska near Onawa, and the Omaha Tribe of Nebraska near Council Bluffs. State compacts have a duration of eight years before renewal. The state collects no taxes on gambling activities on the reservation, but collects an annual fee of $30,000 from two of the three tribes, in accordance with the negotiated compacts [Iowa General Assembly, 1999, IIC: para. 5-6].

The floodgates for riverboat casinos opened because of the popularity of Indian gaming. The demand for gambling seemed to be growing, and thus represented a profitable business venture. People saw the economic potential of legalized gambling for the state. A state that allowed gambling could collect a gaming tax and additional sales and income taxes, but these revenues were not being realized because Indian revenues were nontaxable. In Iowa, the 1980's brought an economic recession that led to farm crisis and a massive shutdown of machinery factories [Hsu, 1999, 71]. The state turned to riverboat gambling in an attempt to boost river communities, and in 1989 Iowa became the first state to legalize riverboat gambling. On April 1, 1991, the first riverboat casinos began operations along the Mississippi River. Illinois and Missouri soon followed.

The competition for riverboat casinos grew fast and fierce, because riverboats could relocate with ease to realize better profits elsewhere. Of the five Iowa riverboats in commission during July 1992, two soon left the state and another left in April 1993. Iowa was forced to relax its betting regulations to compete. The maximum $5 bet and a limit of $200 in losses per person per day were abolished, and casinos were allowed to operate 24 hours a day instead of closing at 2 a.m. nightly.

III. Iowa Revenues

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In the past 15 years, casino gambling in the state of Iowa has become a booming industry. The state now houses ten riverboat casinos, three casinos on reservations, and three land-based racetracks and casinos. Iowans lost a record $879 million at racetracks and casinos in the 2000 budget year, a 10% increase from the previous year [Petroski, 2001, 1B]. Such a large industry can affect the structure of tax revenues in many ways.

State and local governments in Iowa receive a percentage of each casino's adjusted gross receipts, defined as gross receipts of the casino minus winnings paid out. The state collects 5% of the first $1 million in adjusted gross receipts of each casino, 10% of the next $2 million, and 20% of any receipts over $3 million, increasing by 2% per year but not to exceed 36%. In addition, 0.5% of the adjusted gross revenues goes to the city closest to the casino, and another 0.5% is received by the county. The Gambling Treatment Fund is to collect 0.3% of receipts [Iowa General Assembly, 2000, XD - XF].

In Iowa, these revenues have increased tremendously as the gaming industry continues to boom in the state. As can be seen in Figure 1, state revenues from all non-Indian casinos skyrocketed from $47.0 million in 1995 to $179.6 million in 2000, a 282% increase over that period.

Source: Iowa Legislative Fiscal Bureau

_____FIGURE 1. Iowa State Taxes Collected, Non-Indian Casinos

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IV. Tax Incidence Analysis

As tax revenues from casinos continue to rise and become a larger part of state and local revenue, it is important to understand where these dollars come from. Specifically, the ultimate source of tax revenue can be traced back to the visitors of the casino since they directly determine the casino's gross revenue. Although gambling is a voluntary activity, tax money generated by casino revenue can be seen as a personal tax just like the excise tax on alcohol and tobacco. Many studies have already been done analyzing state-run lotteries, and have found them to be regressive taxes. The progressiveness or regressiveness of a casino tax can also be studied.

Daniel Suits wrote a pioneer study in 1977 on the issue of gambling tax incidence. Suits surveyed 1736 people in a nationwide survey and inquired about their gambling behaviors. He found that, as a whole, the casino tax was income progressive, meaning as income increased, a larger percent of income was spent on gambling. However, the tax was regressive for residents of Nevada, the only state that allowed gambling at the time of the study [Suits, 1977, 27].

The primary findings of Suits are considered by many economists to be outdated, and irrelevant. One reason is that legalized casino gambling at the time of the study was limited to the state of Nevada. High travel costs posed a significant barrier for any low income person to participate in gambling [Suits, 1977, 28], so the ever-increasing accessibility of casino gambling warrants new studies. Further, opponents criticize Suits's use of a national sample in light of the limited access of gambling. It is not appropriate to calculate the incidence of a tax in one isolated community using nationwide data when many people surveyed had never been to Las Vegas [Borg, et al, 1991, 330-1]. In light of these two limitations, only the Nevada sample is relevant to the current state of the industry, and analysis revealed that the casino tax was indeed regressive for this data.

Borg, Mason, and Shapiro conducted a study without the weaknesses found in Suits's work. When their study was conducted in 1991, approximately 10% of the United States population was within a two hour drive of a casino (due to the beginnings of gambling in Atlantic City in 1978). The data used consisted of only residents of Clark County, Nevada and Atlantic City. Two separate regressions were performed for each locale using first only those who had gambled and then gamblers and

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non-gamblers together. In the regressions, demographic variables including log of household income acted as independent variables and the log of the weekly budget used for gambling was the dependant variable [Borg, et al., 1991, 324].

The results of the study showed that the gambling tax was indeed regressive. Since a log-linear model was used, the coefficient on the log of household income variable represents the income elasticity of casino expenditures. A coefficient equal to 1.0 would signify a proportional tax, while a number greater than one would imply a progressive tax. In each of the four regressions, the income elasticity was less than one, meaning the gambling tax was regressive. Each result was significant at the 10% level. Take as an example the coefficient of 0.88 for the Atlantic City data utilizing both gamblers and non-gamblers. This means that as income rises 10%, a household's gambling budget increases by 8.8%. The regression showing the most regressive tax was that of the Las Vegas combined sample with a coefficient of 0.30 [Borg, et al, 1991, 326].

While the Borg, Mason, and Shapiro study provided a much improved study compared to that of Suits, it too has its own limitations when used in the context of the current gambling industry. Most importantly, the accessibility of gambling venues has exploded since their two city study. Now gambling sites dot the rivers, Indian reservations and urban areas in 48 states. The majority of the U.S. population is now within driving distance of a casino.

William Rivenbark conducted a tax incidence study in 1995 that reflects the current gaming environment. Rivenbark focused on the state of Mississippi, which has had legalized dockside casino gambling since 1990. At the time of the study, seven counties housed casinos along the Mississippi River, and one county had an inland casino located on an Indian Reservation. Rivenbark collected data from people residing in casino counties as well as people living in non-casino counties by using a telephone survey.

Rivenbark compared the responses of casino county residents to those living in non-casino counties. Not surprisingly, residents of casino counties visited casinos more frequently at each income level but gambled less each trip. In the case of lower income households (income less than $40,000), total gambling budget as a percentage of income was higher for casino county residents than for non-casino county residents [Rivenbark, 1998, 585]. Therefore, accessibility and convenience increases the amount that lower income households spend gambling.

Rivenbark conducted a regression analysis to formalize his findings. Using a log-linear regression similar to that of Borg, Mason, and Shapiro, he found the income elasticities for both casino counties and non-casino counties to represent a regressive tax, with values of 0.44 and 0.60, both significant at the 5% level [1998, 586]. A lower elasticity for casino counties means that the gambling tax is more regressive in casino counties, since a value of one would represent a proportional tax.

In all three studies, the more accessible casino gambling becomes, the more regressive the gambling tax becomes. This provides a dilemma for states wishing to add tax revenue by allowing construction of a new casino: the tax hurts lower income households relative to high income households, and this phenomenon will worsen for each new casino allowed. This is contrary to the prevailing idea of a "good" tax, such as the income tax, which is progressive.

V. Demographic Distribution

Each study, Rivenbark's in particular, also found statistically significant differences in the tax burden placed on different demographic groups. In casino counties, Rivenbark reveals that, even within income groups, non-whites spent 70% more on gambling than whites. He also found in both casino and non-casino counties that single people spent 95% and 156% more on gambling, respectively, than people who were married. Finally, as education levels increased, the amount spent on gambling decreased significantly, ceteris paribus [1998,586]. All of this lends a new dimension to the debate over casinos for the purpose of collecting taxes. It appears that state revenues collected from gambling receipts are funded disproportionally by low-income, less educated, single minorities. Rivenbark remarks " if the less educated are being exploited to raise revenue, then the state has a vested interest in the misfortunes of the poor and uneducated" [1998, 588].

Native Americans are an exception to the rule when it comes to the effects of gambling on disadvantaged groups. Native Americans have historically been one of the poorest and most exploited groups in the United States, yet the presence of gambling has had an overall positive impact on the reservations that house casinos. The stated purpose of the IGRA is to promote "tribal economic development, self-sufficiency, and strong tribal government … and to protect such gaming as a means of generating tribal revenue" [IGRA, 1988, Sec. 2702]. The act has served

its purpose - revenues accumulated by tribes have soared since the passing of the IGRA, increasing from $212 million in 1988 to $6.7 billion in 1997 [National Gambling Impact Study Commission Report, 2000, 2:9]. However, the regressivity of the gambling tax means that gambling merely takes from the poor to give to the poorer.

VI. Pathological and Problem Gamblers

When the thrill of the gambling experience and recovering past losses becomes a dependence or an obsession, problematic or compulsive gambling is the result. Gambling advocates claim that these cases are few and limited, stating that only 1% to 3% of the gambling population has a problem with compulsive gambling [Nichols, et al, 2000, 251]. However, it has always been difficult to classify what constitutes a compulsive gambler, and unbiased information has been difficult to find on this sensitive topic.

The National Opinion Research Center at the University of Chicago improved on the way gamblers were classified in 1999 while conducting research for the National Gambling Impact Study Commission, a federal report released in 2000. Their new system, the NODS survey system, is based on 17 items about lifetime behavior and another 17 about behavior in the past year. NORC defines a problem gambler as one who fits three or four of the criteria, and a pathological gambler is one who fits five or more [NORC, 1999, 21]. According to these definitions, although around 14% of all adults have never gambled, 1.2% of the entire adult population suffers from pathological gambling, and an additional 1.5% are problem gamblers. A total of 5 ½ million Americans suffer from one of these two conditions, with an additional 15 million classified as at-risk gamblers [Ibid, 25].

A detailed look into the demographics of pathological gamblers reveals even more. Compared to the 1.2% prevalence in the general population, African-Americans are more than 2½ times more likely to become a pathological gambler in his or her lifetime, even when controlling for income level. Those with less than a high school education as well as persons with an income less than $24,000 also suffer from the condition at rates above the overall average, ceteris paribus. Once again, disadvantaged groups are represented at disproportional rates. Accessibility also plays a role. People living within 50 miles of a casino are more than twice as likely to become pathological gamblers

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than those living within 250 miles [Ibid, 28].

The losses pathological and problem gamblers accumulate are staggering. It is difficult to determine an exact monetary value of gambling losses because gamblers in general tend to overestimate winnings and underestimate losses. But NORC has estimated that these two groups alone account for 22.1% of yearly losses to casinos, and 15% of total dollars lost gambling [NORC, 1999, 33-34]. These figures are rather large considering that less than three percent of adults fit into one of these categories.

Losses accumulated by these individuals result in corresponding costs to society. Pathological gamblers cost America $10,550 over a lifetime, and problem gamblers cost $5,130. Aggregated, $5 billion per year is lost, with an additional $40 billion lifetime losses in social services, creditor losses, and productivity reductions due to missing work, fatigue, or preoccupation with gambling [NORC, 1999, 52-53]. NORC also admits that these costs are actually underestimates because they do not account for intangibles such as the intense family breakdown associated with compulsive gambling.

Statistics released by the state of Iowa are consistent with the national figures. "One percent of adult Iowans suffer from severe problems with gambling and two percent have gambling problems approaching severity" [Petroski, 2001, 4B]. According to the Iowa Department of Public Health, 1053 people have received treatment from Iowa's gambling treatment program in 2000, an increase of 87% since 1995 [Ibid, 4B].

Many people find the treatment received by gambling treatment centers to be inadequate or impractical. NORC points out that its societal cost estimate of $5 billion for pathological and problem gamblers is dwarfed by cost estimates for other social problems such as alcohol abuse ($110 billion) and smoking ($72 billion). These latter estimates are dominated largely by treatment costs, while treatment costs for gambling problems represent only a small portion of costs due to a lack of availability [NORC, 1999, 53-54]. In Iowa, the dollars allocated to the Gambling Treatment fund have actually decreased by 14.3% since 1995 [Iowa General Assembly, 2000, XII] even in the face of expanding casino revenues and increasing demand for counseling. Some Iowans desiring treatment are discouraged by lack of a nearby site. Others find that their health insurance will not cover the sessions. The patient is therefore expected to pay for the counseling sessions, which is implausible given their financial duress.

VII. Bankruptcy

Given the regressive nature of the gambling tax and the prevalence of pathological and problem gamblers, it follows that bankruptcies should increase. Bankruptcies have skyrocketed since 1985, growing by 277% nationally from 1985 to 1997 [Nichols, et al, 2000, 247], due in part to the recent relaxing of laws and social stigma surrounding bankruptcy. Pro-gambling groups such as American Gaming Association (AGA) deny that the rapid increase in bankruptcies has any correlation with the increased popularity and accessibility of casinos. For example, Tennessee, with no legalized gambling and a low unemployment rate, had the highest bankruptcy rate in the United States in 1996, while Connecticut, with many types of legalized gambling and a high unemployment rate, had a very low bankruptcy rate.

However, many factors influence bankruptcy rates, and in order to study whether or not the presence of casinos affects bankruptcy rates, these factors must be accounted for. For this reason, a more systematic analysis of this phenomenon was performed by Nichols, Stitt, and Giacopassi in 2000. They chose eight counties with a recently opened casino facility. They then chose, for each of the eight counties, five similar control counties based on fifteen economic, demographic, and social criteria. In their study, they found that the bankruptcy rate increased at a higher rate in the casino county compared to the non-casino control counties in seven out of eight cases, and the increase was statistically significant at the 10% level in five of these cases [Nichols, et al, 2000, 259].

This study included Iowa data. Woodbury County, IA, containing Sioux City, was one of the casino counties chosen, and Black Hawk County was one of its five control counties. Bankruptcies in Woodbury County increased 32.6% over the given time frame, compared to a 16.9% increase for the control counties, a difference significant at the 10% level. A detailed breakdown of the Woodbury county results can be seen in the following table.

Table 1–Percentage Change in Bankruptcy Rate

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	Total Bankruptcies [t-value]	Chapter 7 Filings [t-value]	Chapter 13 Filings [t-value]
Sioux City, IA	32.6%	32.5%	35.8%
Woodbury County	[1.85]*	[1.52]	[6.06]***
Control Counties#	16.9%	20.9%	-16.5%

#Control Counties include Chemung (NY), Black Hawk (IA), Garfield (OK),
　　Daviess (KY), and Ohio (WV)
*, *** represent significance at the 10% and 1% levels, respectively
Source: Nichols, Stitt, Giacopassi, 2000, 255-257

The breakdown of Chapter 7 and Chapter 13 filings for Woodbury County reflects the overall findings of the study. A larger discrepancy consistently exists among Chapter 13 filings, which involves a repayment plan for the debt, than among Chapter 7 filings, which involves a forgiveness of nearly all debt. These results were not as strong as the authors of the study expected. Because Chapter 7 filings represent a larger cost to society, they expected a larger and more significant increase in these relative to Chapter 13 filings [Nichols, et al, 2000, 256].

When considering the equity effects of these findings, however, the results are striking indeed. When an individual files a Chapter 13 bankruptcy, the repayment plan is in effect for many years, until the debt is finally repaid. Although this option represents a lower societal cost, it harms the individual more substantially and for a longer period of time. If the dramatic increase in Chapter 13 filings is due to the presence of casinos, then those who file, most likely low income individuals or problem gamblers, will still face the consequences long after the behavior has ceased.

Another aspect of financial duress that bankruptcy studies fail to account for is the handling of personal debt. When a problem gambler borrows to gamble, they do not borrow solely from corporate agencies such as banks, credit cards, and insurance and retirement funds. The individual will also borrow from family and friends with a promise of future repayment. These lenders are not included in the repayment agreements of bankruptcy filings and are not compensated unless a personal agreement is reached. These agreements are never published or publicized and are very difficult to enforce, especially given the financial

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status of the debtor.   Therefore, any attempts to measure the total financial cost to society of gambling and the resulting increase in bankruptcies are understatements.

VIII. Policy in Iowa

The most important policy decision in Iowa in the area of casino gambling will occur during the upcoming general election in November 2002. In the election, residents from each of the ten counties housing non-Indian casinos will vote on a referendum on whether or not to continue to allow the casinos to operate within their county borders. A simple majority vote will decide.

County residents concerned about the plight of low income and disadvantaged groups in their county should consider voting to disallow casinos on equity grounds. First, casinos represent a regressive tax. Though Suits, Borg, and Rivenbark each used a different methodology to collect data and conduct their regressions, all three studies agree on the connection between accessibility and regressivity of the tax. Rivenbark found that residents in casino counties, having better access to gambling than non-casino county residents, experienced a more regressive tax for that reason. Casinos not only harm those with low incomes, they also generate revenues disproportionally from disadvantaged demographic groups. Second, proximity to a casino increases the chance that an individual will become a pathological or problem gambler during his or her lifetime, and many of the same disadvantaged groups have an increased risk of suffering from a gambling problem. These problems not only harm the individuals but cost society. Lastly, a direct example from Iowa showed that bankruptcy rates increased more in a county housing a casino (Woodbury), compared to demographically similar control counties (including Black Hawk).

Voters can choose to remove casinos from their county and therefore eliminate these negative effects. Furthermore, they can do so without wiping the marginally positive equity effects casinos have had on the Native American population. The tribal compacts are not part of the referendum, and by the IGRA, casino gambling cannot be repealed on reservations unless all similar forms of gambling are disallowed by Iowa state law [Iowa General Assembly, 1999, IV: para. 4]. The referendum is a county issue, not a state issue, so voters can vote with a clear conscience in the best interest of their county without harming the

economic status of Native Americans.

Other measures have been suggested to alleviate some of the problems associated with gambling in Iowa, including disallowing ATM machines in casinos, setting betting limits and single-day loss limits, and enforcing closing times. These suggestions, however, will be difficult to pass. All three restrictions were already in place when riverboat casinos were originally allowed in Iowa, but they were repealed in order to compete with other states for fear of losing tax revenues. This disturbing trend of reliance on casino taxes for income is echoed in the National Gambling Impact Study Commission Report:

> In the hierarchy of considerations of state policymakers, the original arguments in favor of tourism and economic development have often been displaced by the need to generate and maintain tax revenues. The various states' decisions have been driven to a surprising extent not by a steadfast concern for the public welfare but by a fierce interstate competition for tax dollars [2000, 2:7].

IX. Conclusion

Clearly legalized gambling has its benefits and costs. However, it appears that many of the benefits of gambling come at the expense of those who can least afford it. Low-income individuals suffer more due to a calculated regressive gambling tax, and other disadvantaged groups are harmed as well (with the exception of Native Americans, who have benefitted from legalized gambling). Those most negatively affected suffer from severe problems with pathological and problem gambling. All these things lead to a rise in bankruptcies and other social problems that harm not only the individual but the state economy as a whole. In light of this, Iowans should analyze the effects of the huge gaming industry within the state, and should make informed policy decisions based not only on tax revenues and perceived economic benefits but also on the dangerous equity effects of casino gambling.

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