Who Do Sports Books Beat? An Inquiry into the Relationship between the Legalization of Online Sports Betting and Bankruptcy

Abstract

I study the effect of the legalization of online sports betting on bankruptcy rates on a county by county basis. I characterize the context in the introduction and motivate the problem at hand. I then move to the literature review and focus on past attempts that look at this problem or similar problems due to the sparsity of literature. In my regression, I find a minimal short-term decrease in bankruptcy rates followed by a long-term increase in bankruptcy rates. I further find that financially constrained populations are most affected by the legalization of online sports betting. My findings suggest that perhaps the legalization of sports betting nationwide could have unforeseen effects on the average U.S. citizen's overall financial health.

I.   Introduction

In 2009, Jack Markell, then Governor of Delaware, was sued by Major League Baseball (MLB) for trying to legalize sports betting in Delaware, the latter of which an unprecedented move. The MLB won the suit due to the Professional and Amateur Sports Protection Act (PASPA), an act which in large part was implemented to forbid sports betting from ever reaching legality so that the sanctity of the professional leagues and associations could be preserved. In 2014, a similar situation occurred with then Governor of New Jersey Chris Christie. PASPA again reigned supreme. In June of 2015, then Dallas Cowboys quarterback Tony Romo attempted to hold a fantasy football convention which ended up being canceled by the National Football League (NFL) due to the league's gambling policies. While the league was not anti-gambling, league officials explicitly re-declared that it was anti-sports betting. The semantic difference is notable and incited criticism since the league already accepted sponsorships from casinos that did not have an on-site sports book and also participated in state lotteries. The difference, while undoubtedly small, was nevertheless there.

Hence, the future of the industry appeared to be forever confined to Nevada given such unfavorable circumstances. In 2018, however, in a shocking turn of events, the U.S. Supreme Court ruled that PASPA was unconstitutional. Unsurprisingly enough, the first two states to legalize online sports betting were New Jersey and Delaware. Since the 2018 ruling, thirty states and the District of Columbia have legalized online sports betting. The sports betting industry itself has consequently boomed, making roughly $26 billion in the last six years. It continues to grow exponentially, let alone rapidly; approximately 42% of that $26 billion came from 2023 alone (statista.com, 2024). From its lows pre-PASPA, the sports betting industry has cemented itself into everyday life. It has swiftly been adopted by the entertainment industry and these professional leagues which were initially against it. Sports betting has managed to thoroughly ensconce itself in the everyday life of the average consumer—from the broadcasts of games aired to the jerseys which teams wear and billboards across interstates.

Even after PASPA was repealed, sports betting and its legalization have long still been a topic of debate. The cost-benefit analysis between potential state revenue and exposing consumers, particularly those who are financially constrained, to highly normalized and easily accessible gambling is heavily debated amongst policymakers. Many opposing the legalization

have taken the tact that sports betting is merely a way for greedy sportsbooks—under the guise that the legalization is an attempt to increase a state's tax revenue—to prey on less financially literate consumers. They also encourage lawmakers to repeal such laws lest they forget the copious gambling scandals that professional and amateur players have been caught up in.Those in favor cite factors such as entertainment value, and as previously mentioned, tax revenue. The former and the latter are both true. The tax revenue generated is easily observable, and the potential negative effects on individuals are intuitively easy to understand, especially when one has a thorough understanding of the nature of gambling.

There exists a limited amount of literature on how the legalization of sports betting affects consumers. These studies focus on, but are not limited to, loan delinquencies, credit score, credit card repayments, and similar data. The literature, however, on perhaps the biggest—or at least most noteworthy—indicator of credit health, namely bankruptcy, is sparse. Despite the minimal research into online sports betting, abundant research exists on the causal effects of introducing other forms of gambling on the financial outcomes of individuals. There is strong evidence that the introduction of casinos and lottery games significantly increases bankruptcy rates of individuals located in their proximity (Goss et al., 2009; Kearney, 2005). In that same vein, there is also evidence that the people most affected by the introduction of gambling opportunities are more financially constrained as low-income consumers spend a proportionally greater amount of their income on gambling-related expenses (Baker et al., 2024).

If the legalization of online sports betting has the same effect on bankruptcies in affected populations as other forms of gambling, it would be incredibly valuable for policymakers to be aware of such a phenomenon to try to once and for all put an end to this seemingly perpetual debate between the costs and benefits of the legalization of sports betting. Though the debate itself seems to have almost worked itself out without the help of the findings in this paper, as in thirty eight states some form of sports betting is legal, the findings in this paper and subsequent policy implications could prove beneficial in contextualizing the debate from a different point of view. Bankruptcy is the last-ditch option for people in serious debt and serves as the ultimate sign of a severe financial problem. This fact creates adequate motivation for studying the effects of sports betting on bankruptcy. A large influx of financial problems amongst constituents would offset the benefits of increased state revenue and likely make policymakers re-evaluate legalization decisions. Given that existing literature has found that the increase in access to

gambling opportunities, such as casinos and lottery games, causes an increase in bankruptcy rates in affected areas, it is reasonable to expect the legalization of online sports betting to cause increases in bankruptcy rates in affected states and therefore affected counties. Additionally, given that existing literature shows that financially constrained individuals are more likely to engage in problem gambling and, when doing so, allocate a proportionally greater amount of their income as opposed to wealthier individuals, intuitively, the introduction of online sports betting should cause greater increases in bankruptcy rates in counties with lower per-capita income.

II.   Literature Review

Exploring the relationship between consumer financial outcomes, specifically bankruptcy, and its relationship with the legalization of some form of gambling is not a novel idea. It is without a doubt important to explore the empirical literature on the subject matter but first it is necessary to look to older theoretical papers in order to gain a strong understanding of gambling as a whole. Perhaps the most famous theoretical inquiry into the world of gambling was done by Friedman and Savage in 1948 with their The Utility Analysis of Choices Involving Risk. First, though, to ascertain its relevance, I pose a couple of questions: Why do consumers gamble? If consumers do like to gamble, how much do they prefer to wager? And most importantly, what is the causal relationship between income level and propensity to gamble?

Friedman and Savage asserted that the utility of income is some non-negative cubic function where each change in sign denotes a different socioeconomic class (Friedman, Savage, 1948). From this, it is easy to conclude that incremental shifts up in income level yield diminishing marginal utility, i.e., shifts along the curve, while larger, exponential jumps lead to increasing marginal utility. With this theorized utility function, we are able to rationalize low income consumer units' behavior who are not risk averse and are in the initial convex segment. Namely, when taking on said risk, they prefer either low-risk, low-reward or high-risk, high-reward outcomes to medium-risk medium-reward outcomes. The reasoning is presumably as follows: instead of desiring a mere shift up the totem pole and the opposite effects that a medium risk medium reward allocation of resources that any socioeconomic 'class-member' could incur, they prefer either to take the small chance gamble that lifts them up out of their

current socioeconomic class, e.g., a lottery ticket or some other 'fair' gamble, or to take an even greater risk in terms of career path, another form of resource allocation, in order to 'distinguish themselves', or more in line with the analysis, to jump from one socioeconomic class to another, the ramifications of a loss understood, as the expected utility of that move is presumably positive. Many empirical tests have been done on the Friedman-Savage model and for the most part, they tend to corroborate the theoretical propositions of Friedman and Savage. For example, consumers who are dissatisfied with their current income level are more likely to purchase lottery tickets (Brunk, 1981). Additionally, the sensitivity of lottery demand to jackpot size was higher for lower income consumer units, further vindicating Friedman and Savage (Dorn et. al, 2015). The concern that critics often cite regarding preying on a consumers lack of financial literacy appears weak as those who take risky bets are doing so not because of their lack of financial literacy, though financial literacy and the lack thereof is certainly a factor that can contribute to bankruptcy, but rather because of the potential for such a monumental change in their income and consequently, their utility of income as this model conjects. Albeit, this too can be construed as a lack of financial literacy and is something that this paper will continue to explore specifically throughout this literature review.

In order to understand the implications of the Friedman-Savage model as they apply to online sports gambling, it is important to look at sports betting patterns. A 2023 study found that, on average, sports betting attracts a younger crowd (Can et. al, 2023). Similar to the sports entertainment industry as a whole, the online sports gambling industry's largest demographic is young men; 39% of men aged 18-49 use online sports gambling platforms and of this 39%, 60% interact with such sites at least once a week (Hollenbeck et. al, 2024). According to a different study observing a similar age range, 25-54 year olds are the most likely age range to file for bankruptcy (Goss et. al, 2005). In short, the demographic that is most likely to go bankrupt is also the demographic that is most likely to be participating in online sports gambling.

The additive nature of sports betting is also critical. A group of researchers found that the size of deposits made to online betting platforms significantly grew with each deposit and that 40% of bettors deposit money over ten times (Baker et. al, 2024). This suggests a sunk cost fallacy when it comes to this type of gambling. This result is parallel with other behavioral studies done in other forms of gambling such as poker, blackjack, and slots. Studies have also found that the introduction of sports betting or any form of gambling has resulted in a decrease

not in gambling expenditures but rather in non-gambling expenditures further affirming the addictive grasp that gambling as an industry can have on the average and unsuspecting consumer (Kearney, 2005). Can, Nichols, and Pavlopoulos found there to be a complementary relationship between in-person gambling and sports betting (Can et. al, 2023). It appears evident, therefore, that once a consumer is ensconced in the gambling industry whether it be through continuous low-risk, low-reward plays such as $10 straight bets, low risk, high reward lottery games, or incredibly financially irresponsible bets in an attempt to 'beat the odds' and thereafter increase one's utility of income, said consumers become trapped in an ever increasing hole that, in some cases, they will never be able to climb out of without the alleviation of the financial strain they may be able to obtain from filing for bankruptcy.

Although less evidence is present regarding the specific causal effect between online sports betting legalization and bankruptcy, there are many conclusive studies on gambling as an industry as a whole regarding this relationship. Goss et. al in 2009 investigated the effect that the introduction of a casino had on U.S. county bankruptcy filing rates in the first couple of years of operation and concluded that the rates subsequently increased. While the overall vehicle through which the gambling is done is different, we can expect a somewhat similar outcome. A related study on the introduction of instant lottery games found a 3.1% reduction in household quarterly non-gambling expenditures in those states relative to others where there was no introduction of an instant game (Kearney, 2005). This substitution between gambling and non gambling related expenditures is exacerbated when it comes to financially-constrained households. A similar study looking at sports betting found that the introduction of sports betting led to a decrease of about 14% in net investments for individuals (Baker et al., 2024). These phenomena, along with the fact that gambling related activities are not crowded out by other gambling activities but rather complement each other create a snowball effect that is quite hard to stop which, in the worst cases, can lead to a declaration of bankruptcy. These findings imply that eventually, ceteris paribus, gambling related expenditures will altogether crowd out those that are not related to gambling – a losing proposition indeed.

Another study found that the presence of pari-mutuel gambling, the betting system often associated with horse racing, within a 25 mile radius of a community, increased bankruptcy rates by 9.25% (Boardman, Perry, 2007). Casinos, instant lottery games, and pari-mutuel gambling are all different vehicles through which companies provide consumers with increasingly attractive

and accessible forms of gambling, and all resulted in an increase in bankruptcies. Concerningly, these are all in-person activities; online sports gambling is even more accessible.

With this in mind, it is important to consider the financial impact that the legalization of sports betting has, especially on financially constrained households, those which are most likely to gamble problematically. Baker et al., as noted, explored the relationship between the legalization of sports betting and its impact on financially constrained households quite extensively, finding that it "significantly increases the probability that low savings households max out their credit cards" (Baker et al., 2024). These same households reduced their credit card payments by an average of $550 dollars after legalization and while this itself does not further exacerbate the financial constraints placed on said households, it suggests that creditors will be less likely to loan money to these households as they have already displayed a level of financial irresponsibility. I intend to build on this existing literature by testing the relationship between online sports betting legalization and bankruptcy rates, particularly amongst financially constrained subsets of populations.

III.   Empirical Methodology

III. a. Data

I leveraged data from numerous sources. In total, I pulled data from 49 states + Washington DC, leaving out Nevada because of its unique gambling laws. All of the online sports betting legalization data came from the American Gaming Association, including the states in which online sports betting is legal and the years in which the legalization occurred. The yet to be mentioned *'yearssincelegal'* variable was derived from this data by subtracting the year of legalization from the year variable and keeping the positive instances. I then derived indicator variables from this *'yearssincelegal'* variable in order to measure the effect of bankruptcy rate changes relative to the time that had passed since legalization.

In order to measure the specific effect of legalization on financially constrained populations, I used a dummy variable that indicated if the county had a per-capita income below $32,500, which roughly 5% of counties had in any given year. The per-capita income data was pulled from the Bureau of Economic Analysis (bea.gov). I then created interaction terms

between this indicator variable and the indicator variables for 1 year since legal, 2 years since legal, 3 years since legal, and 4 years since legal. In total, this created four interaction terms.

I also included indicator variables for each year (dropping 2018 to avoid the dummy variable trap), to control for time-varying effects that affected all states equally. This was in order to control for exogenous events, such as the COVID pandemic, which affected all counties in largely similar ways. The variable of interest is the change in bankruptcy rate since 2017. In order to calculate bankruptcy rate, I pulled the total bankruptcy filings data from the United States Courts website (uscourts.gov) and the county population data from the Bureau of Economic Analysis (bea.gov). The bankruptcy rate was calculated by dividing total individual bankruptcy filings by population and then multiplying by 100. The change in bankruptcy rate was then calculated by taking the bankruptcy rate of the county in a given year and subtracting the 2017 bankruptcy rate. The other independent variables covered other relevant factors such as per capita income, education, population demographics, poverty rate, unemployment, and total population. In order to select the exogenous control variables to be used in the regression, I used economic intuition and followed precedents and methods used by previous papers. For a rudimentary understanding of the regression, the summary statistics of the regressors are provided in the appendix along with the regression results and sources. It is also worth noting that the format of the data for which I based my regression off of was panel data, the necessary data format to run a fixed effects regression.

III. b. Model Specification and Estimation Strategy

The model specification relies on the fixed effects estimation strategy. As I have a limited number of periods and heterogeneity bias is more than likely going to occur, I deemed it prudent to use the fixed effects method in order to eliminate that possibility. Regardless, given that there are numerous time-invariant, unobserved, county-specific characteristics that have the potential to affect the change in bankruptcy rate, it is necessary to use fixed effects in order to capture their effects. Consequently, as a result of such time-invariant unobserved characteristics, there is a potential for the clustering of standard errors which can lead to biased results. To mitigate this possibility, I arbitrarily cluster the standard errors by county to handle county specific constant

effects at play. By doing so, I also make my standard errors robust, making the reporting of a robustness check superfluous. Regardless, such effects could include, districting, registered parties of lawmakers, etc. In regards to political affiliation, it is easy to see how it one way or the other might play a role in the change in bankruptcy rates as different political views would likely elicit a different strategy when it comes to positively influencing the change in bankruptcies on a year to year basis. With these factors in mind, I provide the regression equation:

$$y_{it} = yearssincelegal_{it} + yearssincelegal_{it} \, x \, Constrained_{it} + Year_t + \chi_{it} + a_i + u_{it}$$

The dependent variable, y_{it} is change in bankruptcy rate as compared to the base year of 2017, when sports betting was legal nowhere except for Nevada. It is entity and time specific. The first four dummy variables of interest, labeled $yearssincelegal_{it}$ represent instances in which a county is one year, two years, three years, and four years removed (if applicable) from legalizing online sports betting. It is imperative that the dummy variables don't cover all possible instances, as this would cause the model to suffer from multicollinearity. I didn't include a dummy variable that indicated online sports betting wasn't (yet) legal. I also didn't include a dummy variable indicating 'year zero' which would be the year of legalization. The reason for these exclusions is that some states legalized sports betting in January and others in December, which could lead to potential problems, especially in the year of legalization. In order to deal with this, previous literature has used the quarter system instead of the year system but due to the lack of data availability, I worked solely with the year as the base unit and implemented the aforementioned fix. I also hypothesize that the effects lag, negating the purpose for a zero year. Since states, and therefore counties, could have legalized sports betting whenever they preferred, I was prevented from doing a simple DiD regression due to the staggering policy implementations. I expect these coefficients to be positive as that would indicate that the policy change causes bankruptcy to increase. As has been discussed, sports betting and gambling in general is addictive. The deposits for most therefore are additive. From this I would also assume that the coefficients get larger as the years go on, especially given the fact that the sports betting

industry has grown exponentially in terms of media coverage and therefore revenue which leads to a potential, as mentioned, lagged effect.

The variable '$yearssincelegal_{it}$ x $Constrained_{it}$' is a look into the effect that the legalization of sports betting has on financially constrained households. As described in the data section, the variable $Constrained_{it}$ takes on a value equal to one when the county per-capita income is <$23,500, otherwise it takes on the standard value zero. I then interacted it with the four dummy variables for the amount of years it has been since it was legalized. This created additional dummy variables that represent the specific impact of legalization on financially constrained counties. Similar to the $yearssincelegal_{it}$ dummy variables, I expect positive coefficients. Positive coefficients would imply that financially constrained counties are more likely than the general population to go bankrupt as a result of sports betting legalization.

Within the model, I also include dummy variables for specific years denoted by $Year_t$. These year dummy variables capture overall yearly trends in change in bankruptcy rate since 2017. This is particularly important to include given that the COVID pandemic occurred within the sample period and the legalization of sports betting occurred in different years for different states. If I had not included these variables, the model may have improperly attributed overall decreases in bankruptcy rate caused by COVID to the legalization of online sports betting. As mentioned, overall bankruptcy rates declined significantly during COVID, so I would expect the dummies that cover that period to be negative.

A set of exogenous control variables are also included to capture other sources of bankruptcy rate changes, denoted by x_{it}. They are observed variables that are unit-specific and time-varying. To illustrate the difference between the inclusion of said control variables and lack thereof I provide versions of the model with and without these variables. a_i represents any county-specific time-invariant unobserved effects that may cause bias to the estimators. As mentioned, there are numerous county specific characteristics that could hamper the results and their consequent interpretation. In using fixed effects, a_i is removed, negating the possibility.

IV.   Results

To determine the impact of the legalization of online sports betting on bankruptcy rates, let us turn to the results of the regression. The regression results provided in the Appendix and includes three different versions. The three versions are as follows: one model that omits x_{it} control variables and the interaction terms covering financially constrained individuals, one model that includes everything except the x_{it} control variables, and one model that includes everything in the model specified earlier in the paper. These models are labeled "Model 1", "Model 2", and "Model 3" respectively.

The primary model, "Model 3," will be our primary focus, but it is still valuable to compare the results in "Model 3" with the other models. Generally speaking, the coefficients of interest are of the same significance and have the same sign in all three models. It is worth pointing out, however, the stark difference in the coefficient between the primary model, "Model 3," and the other two models for when the years since sports betting was legalized is equal to two. In the first two models, this coefficient is negative, albeit insignificant. In the primary model, however, that sign flipped to positive and was significant at the 10% level due to the addition of time and entity specific control variables suggesting that the lack thereof in the first two models likely contributed to endogeneity issues.

Walking through the regression, the reader should notice that the primary regression largely produced expected coefficients, but the coefficient on the first year of legalization was -0.005%, significant at the 5% level, was not expected. This indicates a small decrease in bankruptcy rates in the first year of legalization. Moving onto the second year of legalization, the coefficient indicated a 0.008% increase in county bankruptcy rate, significant at the 10% level. In the following two years, the estimated increase jumped to 0.03% and 0.06%, both significant at the 1% level.

The interaction terms measuring the specific effect on financially constrained counties had similar results. The coefficients in the first two years were 0.02% and 0.04% respectively, but they were both insignificant at the 10% level. The coefficients then jumped to 0.1% and 0.09% and were significant at the 5% level. To put these numbers into perspective, a 0.1% increase translates to financially constrained counties having about 100 more cases of bankruptcy

per 100,000 as a result of the legalization of online sports betting. This figure may seem small, but when considering the general fact that most people do not participate in online sports betting, and that extreme financial loss is required to file for bankruptcy, this is a substantial number. It is also consistent with existing literature that was referenced in the literature review.

Other significant variables to discuss include the dummy variables that control for each year. As expected the coefficients on the variables for 2020, 2021, and 2022 are all negative at the 1% significance level. The Covid pandemic dramatically reduced bankruptcy rates across the country, so it would be problematic if these variables were not negative.

Only four of the control variables had significant coefficients, those being percentage of population with a high school degree, poverty rate, natural log of the population, and civil unemployment rate. The first three of these coefficients have signs that were expected, but the fact that civil unemployment rate increasing caused a decrease in bankruptcy rate is somewhat unexpected. All the other control coefficients were insignificant in the regression, but that does not mean that they were not necessary to include in the regression. As previously mentioned, all of the control variables were included based on economic intuition and all help to address potential endogeneity issues, making the regression and its results less biased.

V. Discussion

Given existing literature on the relationship between gambling, bankruptcy rates, and financially constrained individuals, I expected to find that the legalization of onlines sports betting in American counties increased bankruptcy rates, especially in poorer counties. In the exploration on the causal effect of legalizing online sports betting on personal bankruptcy filings, I found mixed evidence that the policy change increases bankruptcy rates in the first year post-legalization, but strong evidence that by the third year, it increases bankruptcy rates. I also found strong evidence that in financially constrained counties, the causal effect of legalizing online sports betting on bankruptcy rates is even greater.

Looking more closely into the specific results, the regression found evidence that in the year following the legalization of online sports betting, bankruptcy rates among individuals in those counties actually decreased relative to the base, by a small margin of about 0.005%, which

translates to 5 fewer bankruptcy filings per 100,000 people. This is an unexpected result, especially when considering that it was significant at the 1% level. A potential explanation of this result could be the fact that sports books often give out a lot of free money for new consumers to wager on their site along with boosted odds on certain games, tournaments, and events. It is possible that in the first year post-legalization bettors are actually made better off due to this promotional money. In the long-run, of course, the sports books make their money back on these promotions.

Moving onto the second year following legalization, when using the primary model as the basis for conclusions, I found that bankruptcy rates increased by a larger and larger margin each year. Essentially what the model is saying is that the legalization of online sports betting does not have an effect on bankruptcy rate in the first year, but in the following years, a casual relationship blossoms. This makes sense when considering that according to existing literature, online sports betting deposits tend to increase overtime on a consumer by consumer basis (Baker et. al, 2024). Bankruptcy is a sign of an extremely unhealthy financial situation, so for online sports betting to cause bankruptcy, it requires larger bets to be placed and subsequently lost on a relatively frequent basis.

When looking at the effect of the policy change specifically on financially constrained populations, I found similar results. In the first two years following legalization, the coefficients I measured were positive, however, neither one of them was significant at the 10% level. By the third year and fourth year the coefficients jumped, to 0.1% and 0.09% respectively, significant at the 1% level. These percentages reflect a similar increase in effect by year 3 and 4 that I found across all counties. With that being said, the magnitude by which bankruptcy rates increased was even higher, indicating that financially constrained populations are much more susceptible to the negative effects of sports gambling legalization. This result aligns with the previous literature and intuition.

There are a couple of limitations with regards to the data. Above all, the amount of easily accessible, consistent data that has been posted through 2023 is sparse. In order to keep the effects as consistent and measured as possible to account for any potential measurement error, I made sure to pool as much data as possible from the same sources to eliminate the possibility that estimation methods and therefore results were different on a data source by data source

basis. That is not to say that there are not more detailed sources for data. There certainly are those sources that provide more enveloping data that can measure the more niche and nuanced effects of the sports betting legalization on individual consumers but such sources were not available. Furthermore, online sports gambling has not been legalized long enough to measure longer term impacts beyond six years, a standard problem given the present short lifespan of online legalized sports betting.

Other potential limitations in the research include the fact that I treat the legalization of sports gambling within a state as being the same, no matter what time of the year the legalization occurred. For example, if one state legalized gambling in January, I would expect it to have a different effect in the first year compared to a state that legalized it in December. However, due to the fact that the data is collected on a yearly basis, I had no way of delineating between these different scenarios in a way that would allow me to conduct a proper regression. Another limitation is that I had to exclude a couple observations from the sample in order to ensure that I had strongly balanced panel data. For example, if a specific county only had data from 2017-2019, I excluded that county entirely. This could cause omitted variable bias and other model misspecification biases therefore biasing the results of the regression.

Despite these limitations, I am largely confident in the results, and must discuss their implications. While the tax-revenue inflow of online sports betting has been well identified since it first began being legalized outside of Nevada and many proponents of gambling argue in favor of the entertainment value that it provides, the findings suggest it also exposes certain individuals, particularly financially constrained individuals, to negative financial outcomes.

For policy makers in the one dozen states that have not yet legalized sports betting and the twenty that have not legalized it online, these potential negative outcomes are important to consider when making decisions on the legalization of sports gambling. It is unlikely that sports gambling be repealed in the states where it is already legalized. However, there are still certain regulations that could be put into place in order to mitigate the negative financial impacts it has on some individuals while still allowing the majority of those that derive entertainment from gambling to do so. These regulations could take the form of betting deposit limits, restrictions on the type of events that can be bet on, increased disclaimers of the dangers, or more transparency in-terms of odds and expected payouts. But perhaps something that is not exclusive to adults is

the implementation of financial literacy classes in education. On the whole, high schools, both public and private, rarely offer classes that teach students how to deal with their money and make good decisions with it, leading to a defined proportion of the United States population having to deal with the fall out of learning from their mistakes when it comes to unwise financial decisions as a result of a lack of previously instilled knowledge. This could prove quite beneficial for the long term collective financial health of the United States as the plethora of financial investments, wise or unwise, continues to evolve, inevitably creating yet more markets for eager consumers to indulge in their own specific monetary allocation preferences.

VI. Supplemental Appendix

Summary Statistics of Regressors

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99
R.O.C of Bankruptcy	17551	-0.046	0.08	-0.719	0.53	-0.3	0.117
Years since legalization	3687	1.208	1.148	0	4	0	4
Ln(median household income)	18625	10.53	0.195	9.636	11.54	10.089	11.063
% pop. males between 19 – 49.	18315	18.517	3.402	10.022	58.667	12.979	31.789
% pop. with highschool diploma or eq.	18631	34.16	7.333	5.5	57.4	15.2	49.3
% pop. in poverty	18652	14.713	5.852	2.6	56.7	5.2	34.1
Population (Total)	18483	104000	335000	43	10123521	863	1317560
Civil Labor Force unemployment rate	18657	5.469	2.768	0	32.4	0.5	15
% of pop. in poverty * Civil Labor Force unemployment rate	18651	90.389	86.42	0	1530.9	5.81	443.7
% of pop. that are adults	18315	75.525	3.802	19.403	96.274	64.169	84.542
Indicator Variable for financially constrained counties	18829	0.049	0.216	0	1	0	1

Regression Results

Regression Results

	Model 1	Model 2	Model 3

One Year Legal	-0.00906***	-0.00937***	-0.00528**
	(-4.83)	(-4.90)	(-2.59)
Two Years Legal	-0.00111	-0.00150	0.00801*
	(-0.37)	(-0.50)	(2.52)
Three Years Legal	0.0187***	0.0181***	0.0326***

	(4.09)	(3.98)	(6.74)
Four Years Legal	0.0289***	0.0275***	0.0589***
	(4.80)	(4.65)	(9.03)
Year=2019	0.0141***	0.0140***	-0.00774
	(4.43)	(4.33)	(-1.54)
Year=2020	-0.0564***	-0.0559***	-0.0830***
	(-15.50)	(-14.59)	(-14.64)
Year=2021	-0.0944***	-0.0935***	-0.124***
	(-22.47)	(-21.40)	(-21.88)
Year=2022	-0.107***	-0.106***	-0.140***
	(-22.34)	(-21.63)	(-22.66)
Financially Constrained at Legal = 1	NaN	0.0261	0.0209
	NaN	(1.17)	(0.89)
Financially Constrained at Legal = 2	NaN	0.0364	0.0408
	NaN	(1.48)	(1.63)
Financially Constrained at Legal = 3	NaN	0.136***	0.107**
	NaN	(6.88)	(3.28)
Financially Constrained at Legal = 4	NaN	0.131***	0.0933**
	NaN	(6.57)	(2.89)
Financially Constrained	NaN	0.0114	0.00965
	NaN	(0.59)	(0.61)
Natural Log of Median Earnings	NaN	NaN	-0.0133
	NaN	NaN	(-0.78)
% of pop. Male & 19-49 y/o	NaN	NaN	0.000601
	NaN	NaN	(0.81)
% of pop. attained HS Diploma or Higher	NaN	NaN	-0.00166***
	NaN	NaN	(-6.05)
Percent of Population in Poverty	NaN	NaN	-0.00256*
	NaN	NaN	(-2.44)
Natural Log of Population	NaN	NaN	-0.0161***
	NaN	NaN	(-7.78)
Civil Labor Force Unemployment Rate	NaN	NaN	-0.00624*
	NaN	NaN	(-2.41)
Percent in Poverty * Unemployment Rate	NaN	NaN	0.000206
	NaN	NaN	(1.40)
Percent of Population that are an Adult	NaN	NaN	0.00103
	NaN	NaN	NaN(1.75)
Constant	-0.00973***	-0.0104***	0.342
	(-3.63)	(-3.68)	(1.74)
Observations	3553	3553	3536

t statistics in parentheses
* $p<0.05$, ** $p<0.01$, *** $p<0.001$

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