Fall 2023

Sports Gambling is Legal: Now What? A Quantitative Analysis of How Kentucky Can Use the Revenue Generated from Sports Gambling to Help Our Poorest Communities

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Honors Thesis

Submitted

In Partial Fulfillment

of the

Requirements of Hon 420

Fall 2023

By

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Abstract

On March 31, 2023, sports gambling was made legal in Kentucky. This is in large part due to the Supreme Court overturning the Professional and Amateur Sports Protection Act of 1992 (PASPA) in 2018. The legalization of sports gambling is bringing new, excess revenue into Kentucky, raising questions on what to do with the revenue? Through linear regression analysis, Kentucky is expected to earn approximately $23 million dollars in excess revenue. Currently, lawmakers are planning to use the revenue to partially fund state pension plans while saving a small portion (2.5%) to fight problem gambling. Most current research suggests that many states follow similar plans using the excess tax revenue to fund state programs such as lotteries. However, my research decomposes this notion providing a new strategy for utilizing the new excess tax revenue. The excess revenue generated from sports gambling should facilitate economic growth in Kentucky's Appalachian region, the poorest region in the United States). Kentucky an achieve this by investing in community development projects such as affordable housing initiatives and community care centers. Kentucky can also give subsidies to businesses in the Appalachia region to create more economic opportunity for the people in this region. Overall, Kentucky should allocate excess sports gambling revenue to facilitating economic growth and opportunity in the Appalachian region.

Keywords: PASPA, sports gambling, live bets, online sportsbooks, tax revenue

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Introduction

Origins of Sports Gambling

The origin of Sports Gambling can be dated back to 770 B.C. where the Ancient Egyptians placed lots on the events including horse racing and fighting contests. Problems with Sports Gambling can also be traced back to 340 B.C. where the boxer Eupolus of Thessaly would pay other fighters to throw bouts during the Olympic games. In fact, as we moved closer to 0 A.D., the Roman Empire became so enthralled with gambling that Julius Caesar had to make gambling only legal during 'Saturnalia', a move that bankrupted the Roman Empire. Fast forward to Pre-industrial Europe, and Italy was moving in the direction of more formal 'casinos.' The early vice of sports gambling was horses as most modern-day professional sports leagues were not founded until the early 1900's. This is especially relevant to Kentucky as in 1992, the United States Congress passed the Professional and Amateur Sports Protection Act (PASPA) that effectively banned sports gambling nationwide except for Horse racing in some states. One of those States was Kentucky where horse gambling has been around since the early 1800's. Surprisingly, Kentucky waited to legalize Sports Gambling until 2023 becoming the 37th state to legalize Sports Gambling, a full 5 years after Delaware legalized Sports Gambling. With this decision now in place and with sports gambling set to begin in Kentucky on September 28, 2023, one must consider the potential positive and negative ramifications of the venture.

<u>Sports Gambling ramifications</u>

One of the reasons why Kentucky took so long to legalize Sports Gambling was the potential addiction it can cause. Like most things, gambling supplies a rush of endorphins when you hit it big and can therefore lead to problem-gambling. Problem-gambling, as with most addictions, can lead to food insecurity and potential homelessness as the prioritization of the addiction takes hold. This leads to a fundamental question that must posed as “How can Kentucky prevent addiction from taking hold as a result of the legalization of sports gambling?” That is where one of the major positive ramifications comes into play, the amount of money that will be generated. As in many other states, Kentucky is projected to generate around $23 million dollars based on the tax revenue that other states have generated from sports gambling. Kentucky can use this revenue to begin programs to aid those who fall into problem gambling. This paper will address the concerns over problem gambling in detail and explain how these concerns can be mitigated.

<u>Monetary Uses</u>

Kentucky is one of the five poorest states in the United States according to Farrah Alexander’s book, <u>Poverty</u>. In it, she describes the nature of poverty in Kentucky citing that ten of the twenty-five ‘worst counties to live in’ were in Kentucky (Alexander 6). Also, the coal industry is diminishing as more people turn to cleaner energy sources. This change in consumer behavior is affecting the poorest region of Kentucky, Appalachia, the most and increasing poverty rates in those communities. The coal industry in Kentucky dropped by 65% from 2019 to 2020 (Bowen 7). Another contributing factor is the price decrease of natural gases to go along with an increase in their production. In 2005, the central region of Appalachia, Kentucky, and West Virginia, went from 236 million tons of oil produced to only 46 million tons of oil produced in 2020. This has further worsened in Kentucky as since 2005, Kentucky coal production has dropped 70 percent and since 2019, another 47% from that total (Bowen 9). The decrease in coal production has certainly not helped Eastern Kentucky's economy and with the new influx of cash that sports gambling will bring in, something can be done about it. This paper will look to address ways in which Kentucky can use the influx of revenue generated by sports gambling to bring more economic opportunities to the poorest communities in our state.

Literature Review

Legislative Comparison

On March 30, 2023, the state of Kentucky passed Hb 551 which effectively legalized sports gambling. Therefore, to better understand the financial implications and how the overall law could be changed, it is important to evaluate how sports gambling has changed other states and countries. The Professional and Amateur Sports Protection Act of 1992 prohibited states from legalizing sports gambling. David Stern, former National Basketball Association Commissioner said, "The interstate ramifications of sports betting are a compelling reason for federal legislation." Effectively, PASPA disallowed any state that did not already have an active sportsbook of which there were 4: Oregon, Nevada, Delaware, and Montana. PASPA was repealed on October 28, 2014, in the Supreme Court case, *Murphy vs. National Collegiate Athletic Association.* The Supreme Court chose to repeal PASPA because it violated the “anti-commandeering” doctrine making it unconstitutional. The anti-commandeering doctrine prohibits the federal government from requiring states or state officials to enforce federal law (Carroll 224). Once a law is reviewed, the Supreme Court must use the severability procedure to decide whether to invalidate a statute in its entirety or only the part of the law that is considered unconstitutional (Brand 842). The Supreme Court must keep any part of a statute that is constitutionally valid, capable of functioning independently, and consistent with congress’s original intent. That third parameter is often criticized by judges as it is asking judges to make a “nebulous inquiry into hypothetical congressional intent.” (Brand 842). The Supreme Court took this rule and applied it to PASPA stating that every part of the statute was unconstitutional and needed to be removed, setting the stage for a broadening new industry to be born. It is still important to note that congress still does have the power to regulate sports gambling under the commerce clause.

One of the major concerns for consumers in the United States with sports gambling is the variation of sports gambling law between the different states. Only thirty states allow for sports gambling and the law is different in each one. For instance, in states like Iowa and Kentucky, consumers can gamble through in person sports books or through online betting sites. In Delaware and Arkansas, consumers can only bet at in person sportsbooks. In Tennessee, consumers can only bet through online betting sites. Additionally, Oregon and Montana only offer sports gambling through their state lotteries (Carroll 222). With all these variances in the sports gambling law, consumers always must be aware of where they can legally gamble and through what means. Further, individual state governments charge different tax rates on in person and online sports gambling. These tax rates are how state governments make revenue from this industry. It is also a major factor in what sports gambling options the state offer. Retail sports gambling is defined as sports gambling done on site at a state registered sports book. Tennessee taxes sports gambling at a 20% rate. New Hampshire taxes sports gambling at a 50% rate for retail and 51% rate for mobile. Arizona, on the other hand, taxes on retail sports gambling at 8%, while taxing mobile betting at 10%. The biggest difference in tax rates belongs to New York as they tax retail sports gambling at 10% yet tax mobile betting at 51%. How does Kentucky fit into this? With Kentucky’s current legislation in place, retail sports gambling is taxed at a 9.75% rate while mobile sports gambling is taxed at 14.25%. This is likely because more people gamble online than in person and therefore the state can gain more tax revenue from mobile betting ventures. In a law review written by Austin Eggl, Eggl examines North Dakota's unique sports gambling law, as well as whether they should add mobile betting. Sports gambling only generates about 4.5% profit margin for casinos. Common tabletop games such as blackjack gain 13-19% profit margin while Keno offers a 29% profit margin (Eggl 254). With these numbers, it is obvious that for sports books and casinos to make profit on sports gambling, they need as many people as possible engaged in the activity. Therefore, allowing mobile betting in the state allows higher profit margins for casinos and tax revenue for state governments. Kentucky's legalization of both in person and mobile sports gambling fits this criterion making it prime to dominate a vastly growing industry.

Another major difference among states who have legalized sports gambling is who regulates it. Among the thirty states who have legalized sports gambling, only two are regulated by horse racing commissions (West Virginia and Kentucky). The rest are regulated by state appointed commissions on gaming (Miller 48). Does it really matter? States must have somebody regulate their sports gambling and most states added sports gambling into the authority of their already appointed gambling commissions. The same is true for Kentucky. Since 1875, horse gambling has dominated the Kentucky gambling scene with the introduction of the inaugural Kentucky Derby. In 1906, the Kentucky Horse Racing Commission (KHRC) was founded to control the previously unregulated race wagering. Given the KHRC's long standing history and prevalence in Kentucky, it was the logical choice for the regulation of sports gambling in Kentucky. Is there something more? Kentucky currently has no stand-alone casinos. The only establishments where you can legally place bets are at racetracks such as Churchill Downs and Keeneland. When HB 551 was passed, it allowed for in house stand-alone sports books to be created by Churchill Downs, Keeneland, and Kentucky Speedway for a fee. However, new business ventures into sports gambling are disallowed in Kentucky creating a monopoly of sorts for racetracks in terms of in-house sports gambling. Whether this becomes a problem remains to be seen, however, it does at least cast a shadow on the overall gambling future of the state. A separate gaming commission should be created in Kentucky to separate the KHRC's interests from those of the gambling population.

How can these differences be rectified to supply a better sports gambling experience for consumers? Having fifty different laws and regulations in each state becomes confusing for bettors. Should the federal government create a federal law to regulate sports gambling nationwide? As mentioned above, Congress can create a national sports gambling law because of the commerce clause. Some benefits to this would include better uniformity and more reliability in governing structures. It would also likely bring more integrity to the games themselves by having harsher penalties (Malnar 173). However, like PASPA, federal regulation cannot be overly broad as constitutional and legal pitfalls could threaten its viability. As sports gambling continues to grow and more states legalize it, consistent licensing practices and reporting requirements would allow for easier operations creating a more efficient market. Yet, the issues with this proposal are like the ones with PASPA, requiring licensing in the states violates the anti-commandeering doctrine. Moreover, individual states may be better equipped to regulate sports gambling inside their own state markets. A solution to this problem could be to establish minimum standard guidelines which could set penalties for match fixing and other crimes. This way, the law would not be focused on individual states, rather, it would focus on private actors engaged in interstate commerce escaping the anti-commandeering doctrine.

For a more nuanced approach, it is wise to consider sports gambling from the European perspective. Sports gambling began in Europe in the late twelfth century when cock fights and bird races were commonplace. From here, gambling expanded throughout Europe with France creating the roulette game as well as “pari-mutuel” gambling. Italy is credited with creating the game of baccarat. In 1957, the Treaty of Rome created European Economic Community which established the basic principle of ‘free movement of services.’ However, the newly founded European Community was tasked on determining whether gambling was a service, and therefore, regulated at a European level (Corbett 2285). The Community decided that sports gambling and gambling in general was to be left to the individual European Union (EU) states to regulate. Overtime though, the European Court of Justice has modified the definition of services to include gambling, allowing from the EU to regulate sports gambling if it so chose. This relates to the United States as the Commerce Clause in the Constitution gives Congress the ability to regulate sports gambling. Even so, the EU, unlike the United States, acted on their authority by stating, “sports gambling is allowed across border throughout the European free market so long as ‘the imposed restrictions were not discriminatory, justified by imperative reasons of general interest, and proportional and necessary to achieve the objectives pursued (Corbett 2285).’” The EU leaves the enforcement of this rule to the individual member states creating a situation that is commonplace in the United States.

As mentioned above, a key issue for the United States when it comes to sports gambling is the lack of uniformity among the states that have legalized. Every member of the EU allows sports gambling making it slightly less confusing to gamble in Europe, yet, Europe has the same issues as each member state has different regulations regarding sports gambling. This becomes highly inefficient and costly for the internal market and creates an unclear and unpredictable legal framework that leaves gamblers at risk (Corbett 2287). Another key issue regarding the legislation of sports gambling in Europe is the lack of regulation regarding advertisements. Like any other vice, sports gambling can become highly addicting. When companies can advertise harmful activities, more people are at risk of succumbing to that vice. Problem gambling, which will be discussed later in detail, occurs most in those between the ages of 18-24 (Corbett 2292). That same group of people tend to consume more media than any other group creating the perfect mix for addiction to take hold. A similar phenomenon occurred in the United States with cigarette smoking taking hold. In a study conducted by Chris Lovato, "18 of the 19 studies showed that nonsmoking adolescents who were more aware of tobacco advertising or receptive to it, were more likely to have experimented with cigarettes or become smokers at follow up (Lovato 2)." Cigarettes contain nicotine which is a highly addictive chemical making cigarette smoking almost impossible to stop, and while sports gambling does not contain chemicals itself, the action triggers a response of dopamine. When the brain receives this chemical, it makes the body feel good and actively search for a way to bring back that feeling again. That is the exact reason sports gambling can become a problem and why advertising restrictions should be encouraged. Likewise, since sports gambling has affected younger people in Europe, it is likely that the same would hold true in the United States. Corbett poses that advertising restrictions should be put in place to keep gambling advertisements away from children and teenagers in the

United States (Corbett 2292). In doing so, the risk of teenagers and young adults becoming problem gamblers could be dramatically reduced. Nonetheless, many other problems exist with sports gambling and should also be taken into consideration when discussing its legislation.

Risk Factors of Sports Gambling

While the inconsistency among sports gambling legislation remains a problem, there are many problems that exist inherently within sports gambling. One of these problems is gambling addiction. However, many people believe that high-risk gamblers contribute more to problem gambling than low-risk gamblers. High-risk gamblers are the groups of people who are the most at risk of falling into gambling addiction whereas low-risk gamblers are groups who are less susceptible to gambling addiction. Recent research from Alex Russell contradicts the norm asserted above. In fact, Russell's quantitative study asserts that low-risk gamblers contribute more to gambling problems than high-risk gamblers. One of Russell's major findings in the study was that high-risk gamblers bet online less than low-risk gamblers (Russell 234). This finding is encouraging for the future of mobile sports betting in Kentucky as lower-risk individuals bet more on mobile sites. This would mean that the implementation of mobile sports betting in Kentucky should prove less problematic than previously thought.

Despite this encouraging sign, Russell's second major finding proves dramatically more challenging for the successful integration of sports gambling into Kentucky. This is in line with the recent findings of Nicholas Corbett. Corbett studied betting habits among three distinct European countries (Spain, Italy, and Great Britain). In his study, Corbett found that males aged 20-30 were the most at-risk group for problem gambling (Corbett

2292). Unfortunately for Kentucky, the largest population group in the state falls between the ages of 20 and 34 (20% of the population). Corbett's research provides a potential solution to this issue. In Corbett's research, he found that sports gambling advertisers in the United Kingdom target this group specifically, that is males ages 18 to 34. To mitigate this, Corbett proposes that the United Kingdom prohibit sports gambling organizations from promoting sports gambling to get out of financial hardship and employing any person over the age of 25 in any commercial. In doing so, Corbett hopes that less people in the target group will be encouraged to engage in sports gambling lessening the social costs of gambling (Corbett 2292).

Today, mobile sports gambling advertisements can be found everywhere. They are on social media apps, television, browsers, and many others. This directly affects the 20-30 age group as that group consumes the most media content. Daily sports betting companies are placing advertisements on every media app that younger demographics target. The advertisements include hyperlinks to the individual sports books allowing for consumers to be directly exposed to gambling (Eisenhadt 393). Like how tobacco marketing was able to display its products as having a fun time, sports gambling marketers are advertising their products as an integral part of sports. Additionally, large sport media companies like ESPN and Fox Sports are teaming up with sportsbooks further enlarging their advertisement reach (Eisenhadt 395). While this is showing to be beneficial to the sportsbooks, it is only making the likelihood of addiction higher. In an article from Elizabeth Killick, thirteen different studies are compared to evaluate the relationship between gambling rates and advertisements. In every one of the studies, Gillick found that exposure to gambling advertisements increased the amount of betting individual consumers engaged in (Gillick 224). Gillick also found that consumers who engage in sports gambling find that advertisements make themselves feel in control reducing the feeling of risk without decreasing the risk. In a study conducted by Nerilee Hing, consumers were compared based on the number of bets they planned to make versus the amount made on impulse (Hing 149). Hing found that when comparing men and women, men place more planned bets while women make more bets on impulse. This statistic provides evidence of the claim above that males are more likely to engage in sports gambling. Surprisingly, women place more wagers than men on impulse which speaks to the overall serious nature of sports gambling and the effects it can have on all people. Making matters worse, research from Brendan Dwyer shows that individuals who think lowly or highly of themselves are more susceptible to falling into problem gambling. Successful gambling allows individuals to grow in self-confidence when they hit a bet. That rush of endorphins makes those low self-esteem individuals derive improved moods and could lead to dependence on sports gambling (Dwyer 5). On the other side of the spectrum, high confidence individuals also show heightened dependance on sports gambling for self-confidence. When high confidence individuals engage in sports gambling, they feel the need to prove competence. By winning bets, these individuals are displaying competence (Dwyer 5). However, in the pursuit of competence, high confidence individuals can also lose money when engaging in sports gambling. By chasing the losses, high confidence individuals can also become problem gamblers.

The solution, therefore, is to restrict sports gambling advertisers from displaying sports gambling to make money. The Federal Trade Commission (FTC) allows for companies to promote goods and services so long as they are truthful, and evidence based. I argue that current advertisements are not being truthful by advertising “bonus bets” or additional bets that you get for depositing money. While these advertisements are telling the “truth” by FTC standards, they are intentionally hiding the effects that gambling can have on you. The bonus bets function as a way for the company to lure you in and then when you begin placing wagers with the bonus bets, you become enthralled in gambling. This is an effective way for the sports gambling mobile apps to increase their revenue, however, it could be potentially harmful for consumers. If the FTC made sportsbooks explicitly tell consumers the risks involved in sports gambling, the number of problem gamblers would be reduced. In one study, Elizabeth Seal found that those who engage in sports betting bet in less amounts than those who bet on other types of gambling. She also found, that regardless of the type of bet, people view sports gambling more favorably than they do non-sports betting (Seal 1989). This suggests that as more people gravitate towards sports gambling, less people will engage in other forms of gambling therefore reducing the societal impact that sports gambling has. But does Kentucky have any other form of gambling? Currently, Kentucky only employs two forms of legal gambling: horse betting and lottery tickets. Lottery proceeds fund education programs in Kentucky, mainly, grants and scholarships for people attending college. Does this mean that the legalization of sports gambling will cause less money to be available for that fund? We can look to Kentucky’s neighbor, Tennessee, for an answer to that question. In Tennessee, the state lottery also provides a scholarship fund for students attending college. Further, as previously mentioned, Tennessee has legalized mobile sports gambling, yet they have experienced no deduction in their lottery fund. In fact, in 2021 alone, the Tennessee lottery fund increased by $50 million dollars. This is highly encouraging to a state where lottery funds have contributed to more than 2.87 million scholarships and grants to students across the Commonwealth.

However, Seal also points out evidence that rejects this notion. Seal suggests that a key aspect of the nature of sports gambling is its largest detractor. Seal supports Corbett's claims that sports gambling is highly addictive as it is becoming a normal part of sporting events. Seal takes this one step further and suggests that gambling, like drug-use, could lead to poverty and depression (Seal 1373). This is less than ideal for the state that ranks 46th in poverty rate in the nation. In a newly published book, Farrah Alexander explains that nature of poverty in Kentucky. She showcases shocking statistics examining a study that showed that 10 of the 25 'worst counties to live in' were in Kentucky. Further, McCreary County, Kentucky is the poorest county in the United States where its residents make on average just $20,000 a year (Alexander 6). Alexander also asserts that many people who live in Eastern Kentucky and in impoverished areas of major cities often cannot pay their rent leading to a shocking amount of homelessness in the commonwealth. The poverty existing in Kentucky offers an interesting conundrum for state lawmakers. While sports gambling can lead to more poverty and overall depression, it also presents the possibility to make millions of revenue dollars that could be used to fund more housing projects for impoverished Kentuckians.

This could prove to even more beneficial now as mortgage rates have doubled since 2020 lowering the ability of consumers to find affordable housing. Additionally, rent rate increases are nearing historical highs as year-to-year rent prices are now averaging close to $2,000. Further complicating the matter is the destruction of the

Eastern Kentucky coal industry which has seen an 80% decrease in coal production since 2005. Most of the poorest counties in the State of Kentucky rely on the coal industry to make money and while the coal industry continues to decline, more and more people are losing jobs. Therefore, with the influx of revenue that sports gambling can generate, do the benefits of sports gambling outweigh the harm it can cause?

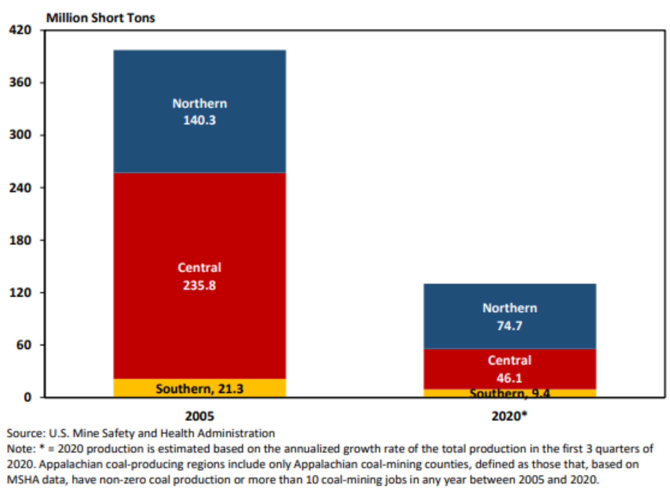

Figure 1: Appalachian Coal Production from 2005 to 2020

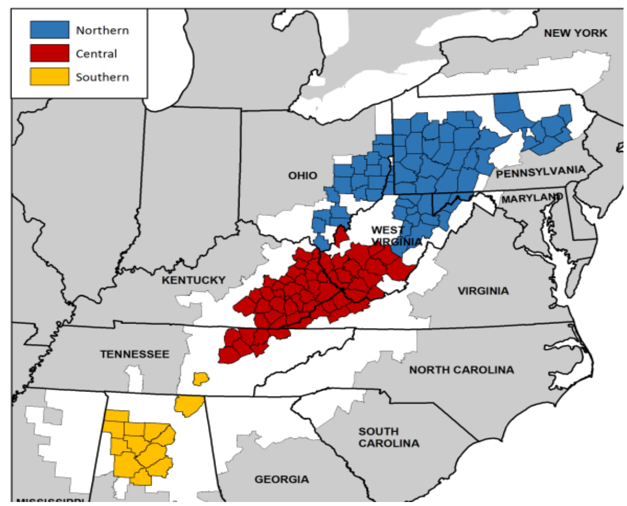

Figure 2: Map of Appalachian Coal Region

<u>Social Harm Caused by Sports Gambling</u>

Outside of addiction, gambling can cause other problems. One of these problems is unmanageable debt. In an article by Carolyn Downs, she cites that 88% of people with large debts have health issues. Further, Downs suggests that gastro-intestinal disorders, high blood pressure, anxiety disorders, and respiratory disorders among others can result from unmanageable debt (Downs 313). Sports gambling, and gambling in general, innately contain some aspects of risk. As more people are drawn to gambling, the feeling of risk is reduced leading to higher amounts wagered. This can cause debt to pile up as Downs suggests above. Unfortunately, debt and the money constraints that follow are often found to impact personal and interpersonal relationships within the family structures. Gambling related debt also causes strain on finances, mental health, and physical health (Downs 314). Recent research by Yani de Soriano confirms this assertion by finding that problem gamblers had the highest degree of distress, health problems, relationship problems, academic problems, and internet addiction. Soriano also asserts that the more gambling becomes a problem, the more harmful it becomes (Yani de Soriano 13). Additionally, advances in technology in online banking allow for individuals to hide their spending habits from their partners and or family members. In fact, concealing evidence of gambling in problem gamblers has been found in 81% of problem gamblers (Downs 316). In the study, the spouses of the problem gamblers illustrated that the breach of trust in their marriages was extreme and that gamblers often had extraordinarily little time invested in the family unit. Furthermore, many problem gamblers reported acts of short temperedness and aggression furthering the detriment in trust. This breakdown in trust and debt accumulation can also be seen throughout the family unit. Downs asserts that children may have their lives uprooted from parental problem gambling (Downs 318). For instance, children could attend private school, but with large debt accumulation, be forced to leave the school. Moreover, debt accumulation can prevent parents from being able to pay bills or buy necessary supplies. Sports gambling can prevent families from being able to raise their children, negatively impacting their quality of life. But is this all their fault? Can the sports gambling industry be held liable for the social harm it can cause?

State corporate crime can be defined as any activity that the state either initiates or facilitates including bureaucratic failure and regulatory dysfunction. State corporate crime represents the harms that occur when corporations engage in organization deviance that is directly approved by the government (Cosgrave 665). State corporate crime can also exist when the regulatory institutes of the state fail to restrain the harmful acts of the business. The inherent nature of sports gambling involves risk and can lead to social harm. Therefore, under Cosgrave's definition of state corporate crime, sports gambling is a state corporate crime. This is especially apparent through online sports gambling methods as the industry can be accessed from the comfort of your own home. The availability of gambling increases the likelihood of problem gambling and leads to more social harm. Recently, online sportsbooks introduced live wagering which is the ability to wager on events while they are taking place. The added feature tempts problem gamblers with the ability to always chase losses. This increase in wagering availability has been cited by gambling addiction treatment facilities as a causal factor in problem gambling (Parke 1352). How can this issue be resolved?

Yani de Soriano proposes that the Corporate Social Responsibility framework (CSR) be applied to the industry to determine the industry's feasibility (Yani de Soriano 14). The CSR framework can be seen when a company or industry considers societal and environmental factors when making their decisions. This allows for companies and industries to function ethically while also making profit. Unfortunately, controversial industries cannot conform to CSR as well as other industries because their products are inherently harmful (Yani de Soriano 15). Nonetheless, Yani de Soriano suggests that controversial industries should still engage in CSR at an intermediate level (Yani de Soriano 15). At this level, companies need to ensure that their activities comply with legal and ethical rules and behaving with transparency and fairness. This can be seen in most online sportsbooks as many companies explicitly tell the consumer that there is risk involved in the activity as well as providing a resources page where problem gamblers can receive help. Additionally, research from Joey Parsons offers another solution for minimizing the social harm of sports gambling. Parsons proposes that sports gambling sites add guidelines that explicitly state that gambling is not an effective way to generate wealth as every bet as a negative expected value (Parsons 272). For instance, a standard money-line bet with two evenly matched teams would be -110 for each team, meaning a bettor would have to wager $110 dollars to receive a payout of $210 (resulting in a $100 profit). This bet's expected value would be a $5 loss: (0.5) * $100 – (0.5) * $110 = -$5. This information should be shared with consumers on the individual online sportsbooks to warn individuals that gambling is not an effective way to generate wealth. Parsons also suggests that online sportsbooks provide hereditary warnings for sports gambling as neurodivergent people are more susceptible to gambling addiction (Parsons 274). If online sportsbooks provided the guidelines to their customer base, they would become fully transparent. In doing so, the industry would meet the standards of the CSR framework effectively minimizing the amount of social harm that can be blamed on the industry.

Financial Implications and the Perception of Sports Gambling

While the literature regarding the problems with sports gambling is numerous, there exists little literature regarding the financial implications or the perception of sports gambling. When researching the financial implications of sports gambling, I noticed that there was an unforeseen consequence to sports gambling: cannibalization. In many states such as West Virginia, New Jersey, and Nevada, video lottery terminals (VLTs) and common tabletop games, such as blackjack, are legal. VLTs are arcade game-looking terminals where consumers can play different versions of slots. Also legal in these states are pari-mutuel horse gambling and state lotteries. For Kentucky specifically, only pari-mutuel horse gambling and the state lottery games are legal. The addition of sports gambling into these markets has disrupted how profitable the markets were previously. For example, a study conducted by Brad Humphreys found that over an 11-week period, West Virginia saw around $100,000 is weekly revenue from sports gambling while also seeing $400,000 in revenue from tabletop games. In addition, West Virginia saw $21 million dollars in revenue a week from VLTs (Humphreys 9). With the overwhelming about of revenue coming from VLTs, West Virginia should be pushing most resources into that avenue of revenue creation. When sportsbooks come to in house casinos, patrons who had previously played VLTs or tabletop games find themselves drawn to the sportsbook. This is known as the displacement effect (Humphreys 14). Moreover, consumers find sports gambling to be less of a risk than other forms of gambling (Max 6).

Part of the intrigue that sports gambling presents is the ability to predict your wagers. Sports gambling allows the consumer to feel as if their wager is informed. VLTs and tabletop games are often random by nature. VLTs are true games of chance while tabletop games like Blackjack rely on strategic chance. Inherently, these types of games have more randomness than sports gambling does, at least in the eyes of consumers. From being sports fans, consumers believe that they know what will happen in a game or over a season and can now use this information to gamble. The is especially true given that more sports data is becoming readily available to the public. For sportsbooks, data is paramount. Unlike financial markets that feature frequent price changes in stocks, sports betting markets have infrequent price changes based on market demand. Sportsbooks are trying to balance the wager on both sides to ensure that they will generate a profit on every line (Edelman 22). Recently, online sportsbooks are creating live bets for consumers. These live bets change quickly over the course of the game tempting consumers to push their luck. To do this, sportsbooks must have access to high-speed data. Upwards of 70% of online sportsbooks get their data from third party companies costing $6,000 a month for three hundred games. With thousands of games being offered every day by sportsbooks, the cost for data is well into the seven-figure mark. Alternatively, sportsbooks can manage the information in house which would cost the sportsbook close to the seven-figure mark in salaries alone (Edelman 23). Either way, the information costs for sports books is high giving them more reason to use the predatory strategies that were mentioned above. But how do consumers see these “investments”?

A recent study found that 50% of people who wagered on sports gambling and made a profit labeled the bet as an investment whereas only 33% of people who wagered on sports gambling and had a loss labeled in as such. Additionally, gamblers who made a profit on their wagers reported the activity as moral while those who lost money on wagering labeled the activity as “morally ambiguous” (Max 7). This consumer perception provides a profitable framework for which states can operate in. As half of consumers see sports gambling as an investment opportunity, the probability that consumers engage in sports gambling increases. This increase can prove profitable for the states who have legalized sports gambling as larger customer bases create higher surpluses for sportsbooks. This can be further seen in an analysis of the tax revenue the United

Kingdom has seen in their sports gambling market. In 2019, the United Kingdom (UK) generated $3.7 billion dollars from in person sports gambling and $2.8 billion dollars from online gambling. If the United States were able to see this level of popularity in their sports gambling markets, the UK projection suggests that the US would see $32 billion is sports gambling tax revenue which is twice the revenue that the state lotteries generate (Matheson 5). Assuming the US would be able to obtain this popularity level, the tax revenue generated from sports gambling would make up for any revenue lost from the cannibalization of other industries.

By reviewing the existing literature on sports gambling, a few key ideas emerge. First, sports gambling needs some consistency when it comes to regulation by the state. Of the thirty states that have legalized sports gambling, none of them have the same regulations. This makes it hard for consumers to bet when they travel because the legislation changes. Second, gambling addiction is the leading detractor when it comes to legalization. As mentioned above, the most at-risk group for problem gambling are individuals aged 20 to 34. Unfortunately, this makes up the largest demographic in Kentucky which creates a challenging puzzle for lawmakers to solve: How do we keep problem gambling from becoming a widescale issue in Kentucky while still maintaining a good stream of revenue for the Commonwealth? Adding insult to injury is the propensity for online sportsbooks to market themselves towards that demographic. In doing so, online sportsbooks are exposing an already vulnerable target market to potential problem gambling. Noted effects of problem gambling include depression and a decrease in self-confidence. Third, sports gambling can cause at risk individuals to gather unmanageable debt. Mass debt accumulation creates the potential for the uprooting of the family unit causing higher divorce rates and affecting generations for years to come. Finally, sports gambling can bring millions of dollars in revenue to underfunded state governments giving governments the ability to help more people and fund better social programs. This has major implications in Kentucky where 27 of the 50 poorest counties in the United States reside. The revenue Kentucky generates from sports gambling can drive commerce to these areas providing for greater economic opportunities for these individuals.

In my research, I found that there is a small amount of literature focused on individual states and how the revenue that states generate from sports gambling can be used to benefit society. My paper aims to provide an at close look at how the Kentucky state government can use the revenue generated by sports gambling to provide economic opportunity to the state's poorest communities. In doing so, I hope that more individuals investigate how states are using their sports gambling revenue and challenge what the revenue is being spent on.

Methods

To investigate the total amount of sports gambling revenue that can be expected in Kentucky, I aimed to conduct a linear regression based on the surrounding states who also legalized sports gambling and had data to analyze. I used Indiana and West Virginia as my main analysis tool for Kentucky while also looking at Illinois and Tennessee for comparison purposes. I chose Indiana and West Virginia as the two I focused on the most because of the similar population sizes to Kentucky, as well as the large population of sports fans in these states. In addition, West Virginia shares many of the same issues surrounding the decline of the coal industry providing an in depth look at how Kentucky could better use revenue generated by sports gambling.

In doing my analysis, I wanted to provide a reasonable conclusion to how much tax revenue Kentucky could generate from Sports Gambling. State lawmakers suggested that Kentucky could see about $23 million dollars in tax revenue within the first year of sports gambling but failed to provide a basis for how they came to that conclusion. As a result, I gathered the tax revenue generated by Indiana from the years 2020-2022 and the tax revenue gathered by West Virginia from the same period and conducted a linear regression analysis to find try and gather what Kentucky could expect to gain from the implementation of sports gambling. Additionally, I looked at the total amount gambled per person in Indiana and West Virginia and took the average to gain a better understanding for what Kentucky could expect to earn. From this data, I was able to come to a reasonable basis as to how much Kentucky could earn from sports gambling's implementation.

<u>Results Part 1: Linear Regression</u>

For this first part, I wanted to examine how Indiana and West Virginia have increased their tax revenue from sports gambling year over year to provide a basis as too what each could expect for 2023. The results are below:

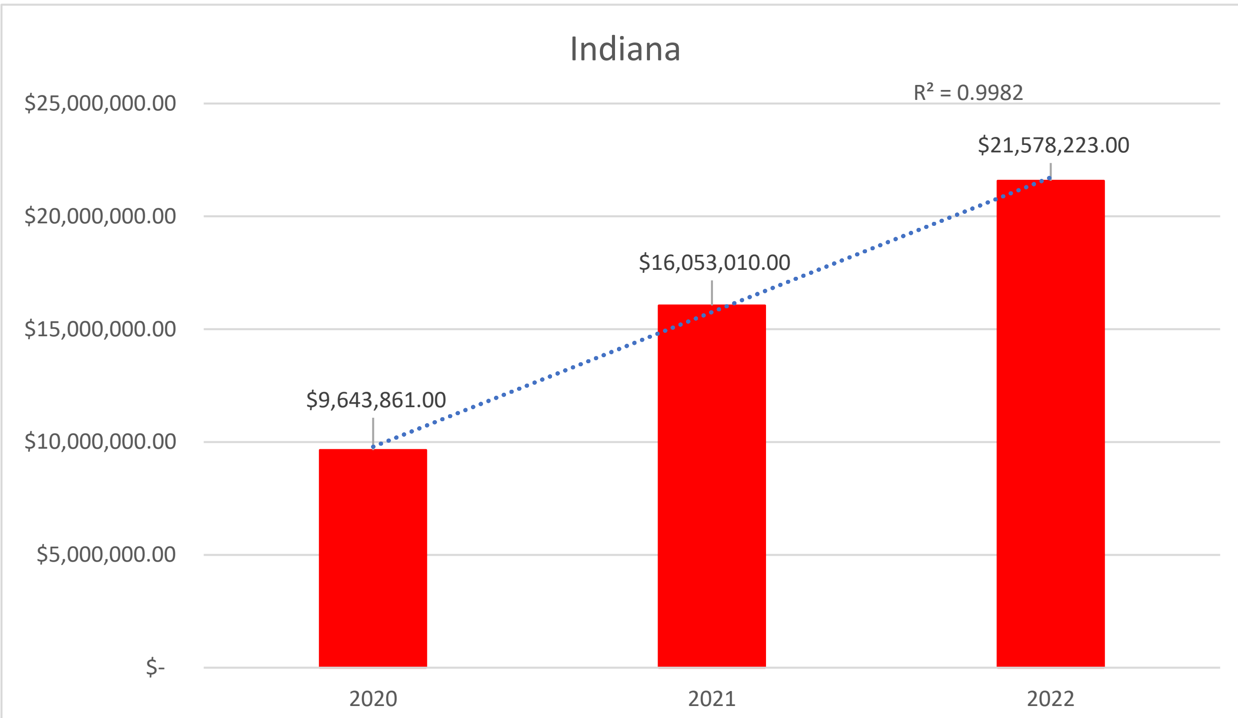

Figure 1: Indiana Sports Gambling Revenue by Year

From this data, I was able to obtain a linear regression equation of y = 5.97x – 12049.61. This regression equation predicts that Indiana will generate $27.7 million dollars in tax revenue from sports gambling in 2023. The R-squared coefficient for this graph is 0.9982 which shows a strong correlation between the data set and regression equation.

Similarly, I conducted the same analysis for West Virginia.

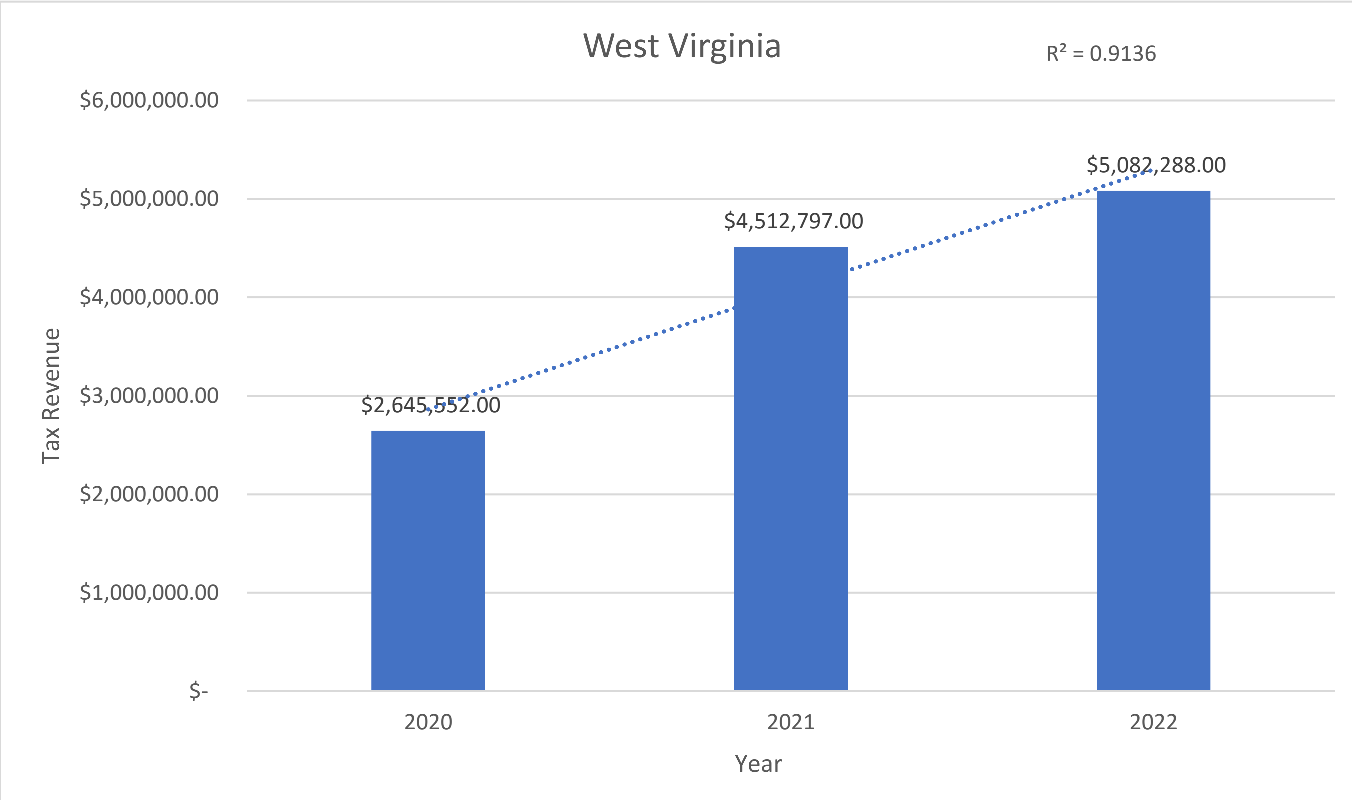

Figure 4: West Virginia Sports Gambling Revenue by Year

From this data, I was able to obtain a regression equation of y = 1.2185x – 2458.51. Using this equation, West Virginia is projected to generate $6.5 million dollars in tax revenue from sports gambling in 2023. The R-squared coefficient for this data is 0.9136 showing that there is a strong correlation between the data and the regression equation. The two prediction models will allow us to compare Indiana, West Virginia, and Kentucky for the year 2023.

<u>Results Part 2: Projecting Kentucky Revenue</u>

After conducting the linear regression for both Indiana and West Virginia, it was time for me to predict how much tax revenue Kentucky could generate from sports gambling. To do this, I took the total amount wagered on sports gambling in those states and divided by the population to find the average amount wagered on sports gambling. For Indiana, this turned out to be $33.37. Likewise, West Virginia's average amount

Indiana = $227,139,189.50 / 6,806,000 = $33.37

West Virginia = $52,882,880 / 1,783,000 = $28.50

After conducting this analysis, I used arbitrary percentages of weight to determine the average amount one could expect to be wagered in Kentucky. By dividing Kentucky's population by Indiana's population, you get to 66.7% which I rounded to 70% for this projection. In doing so, I was able to obtain a weighted average equation for the average amount of money a person would be wagering on sports gambling in Kentucky. That equation is shown below.

y = 0.7 * (33.37) + 0.3 * (28.50) = $31.91

After finding the average value, I multiplied it by Kentucky's 4.509 million population size to produce $143,882,190 in total amount revenue that sportsbooks would make from gambling. Of course, this amount is subject to tax which is where the state revenue from this industry is generated. Lawmakers suggested that Kentucky would see around 80% of the total wagers placed through online sportsbooks while the other 20% would be wagered in person. Given Kentucky's different tax structure for each type of wager, the expected revenue changes based on these percentages. To find how much tax revenue Kentucky could expect to generate, I had to use the expected value formula, which takes the possible outcomes and multiplies them by their probabilities before adding them all together. That equation is shown below.

y = 0.8 * ($143,882,190 * 0.1425) + 0.2 * ($143,882,190 * 0.0975) = $19,208,273

Adding in the additional revenue that is generated from the opening of in-house sportsbooks (8 in Kentucky * $500,000 licensing fee) and the licensing fees for each online sportsbook ($50,000 in Kentucky), you reach a total expected revenue of $19,208,273 + $4,150,000 which equals $23,358,273. This total matches what lawmakers expected Kentucky to generate, proving the calculation to be reasonable.

Discussion

From the analysis above, we can see a reasonable approximation to how much of a boost Kentucky can expect from the increase in tax revenue. Sports gambling inherently will produce problem gamblers who need resources. State law recognizes this and allocates those resources for those services, while allocating a larger portion to state pensions. As currently constructed, the sports gambling law in Kentucky allocates 2.5% of the tax revenue towards problem gambling resources with the remaining 97.5% going to fund state pensions. This comes out to about $583,957 dollars for problem gambling and $22,774,316 funding state pensions. This allocation proportion seems to be out of line given the number of consumers who will need at least some help with problem gambling. In addition, the Kentucky state pension fund has one of the lowest funding percentages in the United States with only 33% of state pensions being fully funded. If the underfunding of state pensions continues, thousands of Kentuckians would not have an appropriate amount of retirement saved making poverty rates increase. However, with better financial education in our communities, state employees would be able to utilize different instruments such as 401ks or Roth Independent Retirement Accounts (IRA) to fund their retirements. This would free up funds to go where it is

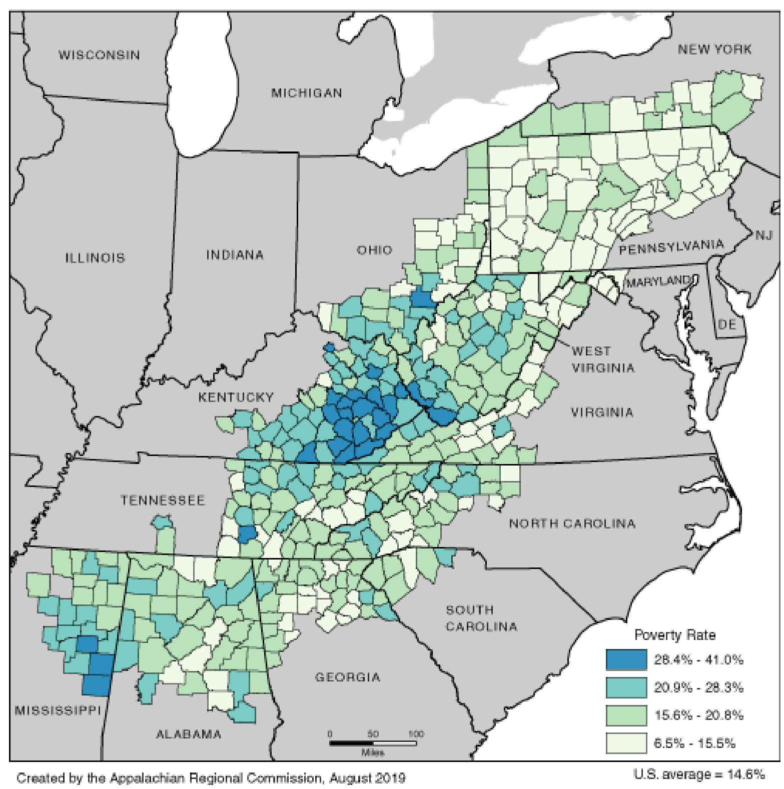

Figure 5: Appalachian Poverty Rates in Kentucky

desperately needed in Kentucky, Appalachia. According to the Appalachian Regional Commission, poverty rates in Kentucky's Appalachian region range from 20% to 41% in these communities. This is close to double the poverty rate of the rest of the United States. As mentioned above, poverty rates in this region are only getting worse as the coal industry is experiencing a serious reduction in revenue. To supplement this, I propose that Kentucky use the excess tax revenue generated from sports gambling to improve the economic conditions in this region, but how? How can Kentucky use the excess tax revenue to support these impoverished communities?

One way that tax revenue generated by sports gambling could be used to help Appalachian communities flourish would be to improve community development and public health. In a publication from 1977, Tom Gish reported that many people in the Appalachian region were stuck in places. The people were not experiencing the bountifulness that the coal industry was finding (Gish 2). The coal industry exploited many people in Appalachia paying them pennies on the dollar for the work that was being done. In other words, as the coal industry was flourishing, the people in Appalachia were diminishing. Further, Gish commented that the people in Appalachia would not ever get to experience going to college and were likely to end up right where their parents are (Gish 4). These communities have little to be excited about besides the region's natural beauty. Through community development, the people living in these communities could experience a major upgrade to their quality of life potentially decreasing poverty levels, or at least general dissatisfaction. Community development is a venture that helps low-income people and communities by giving them access to financing and other tools to build affordable housing units, begin businesses, and build community facilities such as health clinics and childcare centers. In essence, community development helps make struggling communities more stimulating economically and stronger socially (Erickson 2058). There are already several measures in place to assist the affordable housing portion of community development. Two of those measures are the HOME Investment Partnership Program and the Low-Income Housing Tax Credit. The HOME Investment Partnerships Program provides grants to states and localities that communities use to fund the building and buying of affordable housing. Whether this is to rent or buy these properties, the HOME Investment Partnership Program provides direct rental assistance to low-income people. The Low-Income Housing Tax Credit also encourages people to build or buy affordable housing units by providing a tax credit on a tiered structure. The first tier is at least 20% of the residents in the projects are occupied by tenants with an income of 50 percent or less of area median income adjusted for family size (AMI). The second is at least 40 percent of the units are occupied by tenants with an income of 60 percent or less of AMI. The third and final tier is At least 40 percent of the units are occupied by tenants with income averaging no more than 60 percent of AMI, and no units are occupied by tenants with income greater than 80 percent of AMI. For these communities, the Low-Income Housing Tax Credit is unavailable because of the criteria. With most of the population falling below the poverty line, the area median income is low thus limiting the ability to use the Low-Income Housing Tax Credit. To make up for this, Kentucky should allocate a portion of the funds to the creation of affordable housing units. With an influx of affordable housing units in the region, Appalachian residents would be able to spend more money on providing for their families and improving their quality of life. Additionally, the Affordable Care Act of 2010 authorized $11 billion dollars of funding between 2011 and 2016 to operate, expand, and build new community health centers (Erickson 2060). While $11 billion dollars is unrealistic for the tax revenue that sports gambling can make, the opening and operation of a new Appalachian community health center is very possible with the expected $23 million dollars of excess tax revenue generated. This community center would provide the region with a new social support system with the goal of rejuvenating a region that has experienced more hardship than most other regions in Kentucky.

Another way that Kentucky could use the excess tax revenue generated by sports gambling to improve the living conditions in Appalachia is by providing business subsidies. A subsidy is a way for the state or federal government to assist a business or industry in creating more jobs or keeping prices competitive for consumers. One of the more common forms of subsidies is tax subsidies given in the form of tax credits. Many states offer tax credits to businesses in exchange for creating jobs or making new facilities, often in local areas (Martel 4). Usually, businesses receive tax credits for investing in projects in the state they are operating in with special incentive to direct activity to struggling places (Martel 4). With the decreasing activity of the coal industry in Appalachia, this area is seeing increasing rates of unemployment. Furthermore, the area also experiences a large wage gap to other rural communities in the United States. This is largely because there are no urban locations in this region. Without any focused urban communities or colleges in the area, many Appalachian residents are not developing the same skills or receiving the same education that other rural communities are experiencing in the United States (Bollinger 33). By using some of the excess revenue generated from sports gambling to finance tax credits and subsidies, more businesses may be encouraged to open shop in Appalachia facilitating economic growth in the region.

Through the analysis above and the subsequent discussion, we have found that Kentucky can expect to make around $23 million in tax revenue from sports gambling. The current allocation of those funds is going towards two very meaningful subjects in problem gambling and state funded pension plans, however, due to the ability for people to plan and save for retirement with other financial instruments, the excess revenue should be going towards improving the living conditions in Appalachia, Kentucky. This paper has discussed many ways in which the excess revenue can be used to improve the living conditions such as through community development projects like affordable housing and a new community health care center and giving tax subsidies to businesses who open new locations in the Appalachian region. While these findings are important to how Kentucky could better use the excess tax revenue, more studies on sports gambling's impact in other communities are necessary. More research into this field could provide better recommendations to lawmakers on how best to utilize the new, excess tax revenue generated from sports gambling. This research can shape how the other twenty states, who have yet to legalize sports gambling, can use the tax revenue to improve the social conditions in their territory.

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