



DEPARTMENT OF MATHEMATICS COMPUTER SCIENCE & ENGINEERING  
TECHNOLOGY

## Analysis of Sports Betting

by

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## ABSTRACT

This thesis analyzes the gambling industry and how its growth has impacted the United States at an economic and individual level. The rise of the internet has made it easier for people to bet from the palm of their hand, therefore making it easier for companies to reap the benefits of a larger customer base, This in turn allows state governments to benefit in revenue by regulating and taxing sports book companies. It is easy to see how states have benefited economically from the gambling industry, but have individuals within the states that allow sports betting benefited as well?

Using findings on gambling addiction and sports betting revenue there may be a correlation between the growth of revenue and the rise in homelessness. This may be supported by also analyzing where states allocate revenue obtained from the gambling industry.

As North Carolina has recently passed a bill that will allow online sports betting as of January 8th, 2024, it is important to disclose findings and question possible correlations to pave the way for future inquisition.

## DEDICATION

To my family.

Gracias mama y papa por su apoyo y por todo lo que hacen. Esto es por ustedes y para ustedes.

Para mis hermanitas, que esto sea otra meta que ustedes puedan sobre pasar como todas las otras metas que e echo yo primero y luego ustedes lo hacen mejor.

Los Quiero Mucho.

Dedicated to Kenny. Rest In Peace Dr. Jones, thank you for welcoming me into the Viking Family and teaching me about "beautiful mathematics"

## ACKNOWLEDGEMENT

Dean Davis,

Thank you for believing in me and doing my reference letter. With a position like yours, you see thousands of students every year. It is an honor knowing you on a personal level. Congratulations on your new gig, I hope to stay in touch with you and be another small example of how much you have changed students lives, thank you!

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# Chapter 1 Introduction

## 1.1 Background and Overview

As of recently, online gambling and sports betting have exploded. Whether it was because of the betting nature of the stock market during the pandemic, or the rise in apps and sportsbook companies, it has taken the scene by storm. In this section, we will dive into the history of gambling as a whole, and narrow down to the current state of gambling and the factors contributing to the rapid growth of the industry.

Understanding the history of gambling and its significance across cultures is important. The current state of gambling will give insight into what the future within the industry/market may hold for sports betting. Many factors have paved the way for the vast availability of sports betting apps and promotions. A combination of the adoption of blockchain technology, targeted marketing, and laws making both of these legal in most states, has been catalysts for the industry's rapid growth.

With the rise of sports betting, there is also a rise in questions surrounding the gambling industry: Is the gambling market profitable? When did sports betting start blowing up? What are the comparable markets to North Carolina? How much of the profit do states put towards gambling addiction resources? These questions are tackled and answered in the sections and chapters to come.

For novice bettors, there will be a slight introduction to how to bet and the most profitable sport to bet on. With the recent announcement that North Carolina will legalize sports betting, novice bettors must educate themselves on the industry and the potential payouts and downfalls of engaging in sports betting. Along with how to bet, there will be information regarding betting addiction and how states use betting revenue to support addiction programs. The question arises whether

there is a direct correlation between the rise in sports betting revenue and the rise in homelessness. This question is proposed because of the impact of gambling and its severe consequences on individuals and communities.

Although the scope of this research will cover the gambling industry as a whole, the focus of it will be sports betting.

## 1.2 Brief History of Gambling

Gambling is often defined as risking, often undergoing an increased amount of risk, to possibly obtain the result that is preferred. The result is not guaranteed, sometimes it may not even be probable. This increases the odds of losing, and in gambling, in the way that this research portrays it, that means losing economically. Merriam-Webster defines gambling as "the practice of risking money or other stakes in a game or bet" [4]. When referring to gambling, this is the definition that will be assumed going forward.

It is said that gambling is the second oldest profession. The reason is that evidence of gambling has been found throughout every period for a vast amount of cultures [1]. Dice were found in ancient tombs [2], and it is even mentioned in Matthew 27:35 that when Jesus was crucified, Roman soldiers divided up his clothes by casting lots [3]. Some other examples of this can be found among other ancient civilizations, for example, the evidence of the Chinese people gambling can be traced back to 4,000 years ago [1]. More precise evidence such as dice and board games have been found during excavations in areas associated with Ur, Crete, Egypt, and India [1].

Gambling quickly became popular in ancient times, and even caused problems. It is said that during the Crusades the king, King Richard I, only allowed soldiers with the status of Knight and above to gamble to avoid distractions [1]. Besides gambling becoming an issue, governing bodies also realized the potential revenue streams that could come from regulating aspects of gambling. An example that we are drawn to is in England where lotteries helped fund public projects such as London's water supply, and even the colonization of America. America itself used lotteries to fund

infrastructure projects in the eighteenth century [1].

### 1.3 Recent Laws on Sports Betting

Although historically there are some uses for revenue generated from regulated gambling our primary focus, sports betting, has had quite a stir in terms of regulations and legalization within the past few decades. In 1992 The Professional and Amateur Sports Protection Act was passed. This federal law made it illegal for most states to allow sports betting for any establishments or anyone within their state's borders. This law however did have a few exceptions like Nevada [5]. It is suggested that the idea behind banning sports betting before more states could legalize it was that it was to protect the integrity of sports. There was concern from the public, government officials, and sports franchises/organizations that the rise in popularity of sports betting could lead to match/game fixing, paid-off referee scandals, and other activities that could damage the team, players, or even the organization as a whole [5].

As mentioned, Nevada was one of the exceptions once The Professional and Amateur Sports Protection Act was passed, so the state was allowed to continue regulating sports betting [5]. It was the only state which has a full-blown sports betting operation. Sports betting was gaining traction before PASPA and that was one of the driving factors as to why the law was passed in the first place, to stop other states from following suit. As with any law, some states and lawmakers supported the PASPA Act and others did not like the federal government being involved in what they thought was an individual state's business [5]. Because of the divided support and advancements in technology to fuel the growth of sports betting even further, the act was eventually overturned by the Supreme Court.

The *Murphy v. NCAA* case was a catalyst decision in supporting the sports betting industry boom. This case was a direct (although somewhat tardy) response to The Professional and Amateur Sports Protection Act (previously mentioned) [24]. This case was put in front of the Supreme Court and was ruled a 6 to 3 vote in favor of New Jersey. This decision was made on May 14, 2018 [24]. The case was

called "The Murphy v. NCAA" case because of the representative or petitioner who took the case before the Supreme Court. In this case, the petitioner happened to be Philip D. Murphy, the Governor of New Jersey, who along with the State of New Jersey argued that The Professional and Amateur Sports Protection Act was unconstitutional because of its restrictions on sports betting. The opposition to Governor Murphy and New Jersey in this case was the National Collegiate Athletic Association or NCAA. Although the NCAA was the named party, most if not all major professional sports leagues were the respondents in the case.

The petitioner, Murphy, and company, stated that The PASPA Act violated the Tenth Amendment by steering state lawmakers towards enacting and enforcing a federal law, in other words, strong-handing them into doing so [24]. Although the vote by the Supreme Court was not until May of 2018, the case began in 2012 when the New Jersey legislature passed a law that aimed at reversing the state's stance on sports betting [6]. This law was named the Sports Wagering Act. This Sports Wagering Act allowed for New Jersey racetracks and casinos to legally operate sports books and sports betting. When informed of the law passing the NCAA, MLB, NBA, NFL, and NHL sued the state of New Jersey stating that the law passed [6].

The Sports Wagering Act in New Jersey was not only a law but a challenge to The PASPA Act and the regulations the federal government was trying to impose at the state level. The Supreme Court's decision in Murphy v. NCAA had a large-scale effect on the balance of power between the Federal Government and States. Following New Jersey's win in the case, there were several other states who followed suit and legalized sports betting within their borders. This provided an avenue for a sports betting boom within the United States in the past five years.

## 1.4 Gambling In North Carolina

Although gambling is allowed in North Carolina, sports betting is not. Gambling under North Carolina law covers a variety of games that involve probability.

### 1.4.1 Definitions of Games in North Carolina

Under North Carolina law, illegal lotteries, Monte Carlo nights (events with "casino-like" games), racing pools, and video poker are all prohibited. *“North Carolina law states that it is illegal for any person or organization to operate a game of chance or to play or bet on any game of chance that involves winning money, property, or anything of value. Violators shall be guilty of a Class 2 misdemeanor. GS 14-292.”* [25]

Along with the mentioned games, slot machines are also illegal in the state of North Carolina. A slot machine is defined as any machine that accepts tokens or coins followed by an action to start the game (classic and well-known machines usually use a level of some sort) [25]. The game that is triggered by the action taken on the slot machine can result in winning additional tokens, money, or anything else with monetary value. In North Carolina, slot machines cannot be manufactured, stored, or transported [25].

Another popular means of gambling, VGMs or Video Poker and Video Game Machines became illegal in North Carolina in July of 2007 [25]. Video game machines can be video playing card games, video bingo, video lotto, or any other video-based game of chance. Games where the chance of matching letters, symbols, or words is the main objective, are specifically called out as VGMs and therefore illegal in North Carolina [25].

### 1.4.2 Enforcing Gambling Laws in North Carolina

In North Carolina gambling is regulated and controlled by State Law and various state agencies. Agencies such as the Alcohol Law and Enforcement (ALE) Special Agents are authorized to enforce the gambling laws set in place as part of their duty [25]. The North Carolina Department of Justice and the State Legislature both play a role in regulating and enforcing state gambling laws. The Department of Justice provides direction on interpreting gambling laws and may both investigate and prosecute any illegal activities related to gambling [25]. The State Legislature holds the power to

pass any laws relating to gambling. This includes any amendments to current laws and even expansion of gambling regulations [25].

The two main popular forms of gambling in North Carolina as of now are the North Carolina State Lottery (NCEL) and Tribal Casinos [7]. The North Carolina Education Lottery is in charge of running the state-wide lottery. The games ran under the NCEL include Powerball, Mega Millions, and all scratch-off ticket games. As the name suggests, the profits from the gambling games or lottery help support education efforts throughout the state.

The two tribal casinos in the state of North Carolina are both run by the Eastern Band of Cherokee Indians. These casinos are the Harrah's Cherokee Valley River Casino in Murphy, NC, and Harrah's Cherokee Casino Resort in Cherokee, NC [7]. Although they are owned and operated by the Cherokee Indians, they are run under compacts negotiated with the state. Therefore the state must work alongside the tribal-state gaming authorities to regulate and oversee the casinos.

### **1.4.3 Sports Wagering Bill HB 347**

The sports betting bill passed on a senate reading with a 37-11 vote and a house reading with a 69-44 vote and Governor Roy Cooper signed it into law on June 14, 2023 [8]. The bill is more commonly known as the Sports Wagering/Horse Racing Wagering Bill. This bill covers wagering at the amateur, college, and professional levels. The governor and other supporters of the bill believe that this move to legalize and regulate sports betting will "create many good-paying jobs and foster strong economic opportunity" [8]. It was also mentioned that in the years to come the revenue from sports betting will be used to reinvest in North Carolina's education system [8]. The bill has put the North Carolina State Lottery Commission in charge of regulating licenses and applications for licenses for individuals, service providers, and sports wagering suppliers [8]. The bill allows for in-person and online placement of bets or wagers. Sports betting will be allowed in North Carolina as of January 2024.

## Chapter 2 Current State of Sports Gambling

Data can give insights into what is going on in a particular industry. Trends in sports betting activity can correlate with sports themselves, time of year, and possibly holidays. From a quick look at sports betting data it is no secret that the industry is thriving. The current sports betting market is showing trends and no sign of stopping.

### 2.1 Current Sports Betting Market

After the decision in New Jersey, the United States is currently in its sixth full year of sports betting [9]. This means states that were not previously allowing the regulation of sports betting within their borders. It has been calculated that from the twenty-nine states that allow sports betting, a whopping twenty-one billion dollars in revenue have been collected [9]. The revenue is a staggering number, however when compared to the handle it is less than ten percent with the total handle being over two hundred and sixty billion dollars [9]. The term "handle" in terms of sports betting refers to the total amount of money wagered. This is an important metric for the industry since it helps keep an eye on betting activities. These trends can help define the popularity of a sport, a league, and even the sportsbook with which the bet was placed. The term "hold" is the percentage a sportsbook company is expected to receive as profit on a bet. This, of course, is a percentage taken from the handle, or the total amount wagered.

$$\textit{Hold} = (\textit{TotalAmountBet} - \textit{TotalAmountPaidOut})/(\textit{TotalAmountBet})(2.1)$$

Sports betting is popular all over the world, however, this research will focus on

the United States Market. The figure below shows the total sports betting handle, revenue, hold, and taxes from June 2018 to September 2023 in the US.

Some key callouts from the table above are that New Jersey took advantage of being the winner of the decision against PASPA and currently sits at the top of the table with the highest handle of any state in terms of sports betting. However, New York's market started in January 2022 and is already the third-largest handle. It is projected to take the top spot in late 2024 or early 2025.

Below the data is analyzed using PowerBI.



Market	Handle	Revenue	Hold	Taxes
New Jersey	\$40,187,121,872	\$2,967,460,730	7.4%	\$411,099,015
Nevada	\$34,359,942,294	\$1,928,978,000	5.6%	\$130,206,015
New York	\$29,655,285,322	\$2,598,317,490	8.8%	\$1,302,634,227
Illinois	\$25,347,303,601	\$2,082,868,320	8.2%	\$329,456,593
Pennsylvania	\$23,159,889,163	\$1,886,906,147	8.1%	\$470,192,881
Indiana	\$13,393,905,583	\$1,149,941,141	8.6%	\$109,374,219
Colorado	\$13,382,701,774	\$908,472,560	6.8%	\$50,075,798
Arizona	\$11,688,072,321	\$974,391,638	8.3%	\$56,316,284
Michigan	\$11,497,195,091	\$996,178,857	8.7%	\$51,086,027
Virginia	\$11,360,923,647	\$1,102,314,530	9.7%	\$114,865,353
Tennessee	\$9,310,238,144	\$909,888,543	9.8%	\$161,830,371
Iowa	\$6,781,997,084	\$486,389,117	7.2%	\$32,831,407
Ohio	\$4,486,692,866	\$619,600,341	13.8%	\$69,912,815
Maryland	\$4,019,731,215	\$504,069,951	12.5%	\$37,241,530
Louisiana	\$3,952,803,172	\$420,764,188	10.6%	\$57,204,766
Connecticut	\$2,830,863,704	\$286,396,188	10.1%	\$28,938,505
Massachusetts	\$2,586,208,828	\$258,741,088	10.0%	\$50,259,246
New Hampshire	\$2,408,315,529	\$183,425,435	7.6%	\$83,996,467
Mississippi	\$2,271,009,183	\$257,722,047	11.3%	\$30,926,646
West Virginia	\$2,120,143,231	\$179,169,830	8.5%	\$17,918,893
Kansas	\$2,070,014,453	\$184,586,264	8.9%	\$7,793,842
Rhode Island	\$1,750,181,767	\$155,654,521	8.9%	\$79,383,806

Oregon	\$1,551,789,331	\$153,040,186	9.9%	\$76,520,093
District of Columbia	\$606,421,179	\$74,928,775	12.4%	\$18,925,684
Delaware	\$577,865,015	\$113,187,193	19.6%	\$67,102,930
Arkansas	\$508,771,112	\$50,793,409	10.0%	\$7,352,467
Wyoming	\$279,073,992	\$28,886,965	10.4%	\$1,588,605
Montana	\$159,222,437	\$21,569,733	13.5%	\$3,388,494
South Dakota	\$14,765,722	\$1,762,491	11.9%	\$158,624
<b>Total</b>	<b>\$262,318,448,631</b>	<b>\$21,486,405,679</b>	<b>8.2%</b>	<b>\$3,858,581,604</b>

<https://www.legalsportsreport.com/sports-betting/revenue/>

Figure 2.1: Total Market Revenue as of September 2023

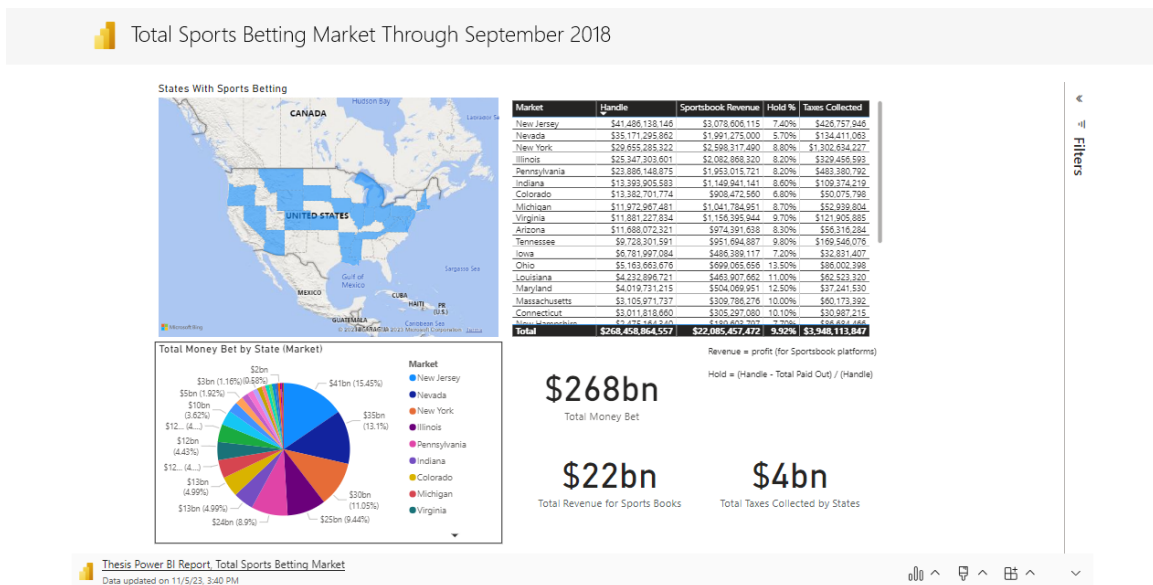


Figure 2.2: PowerBI of Total Sports Betting Market

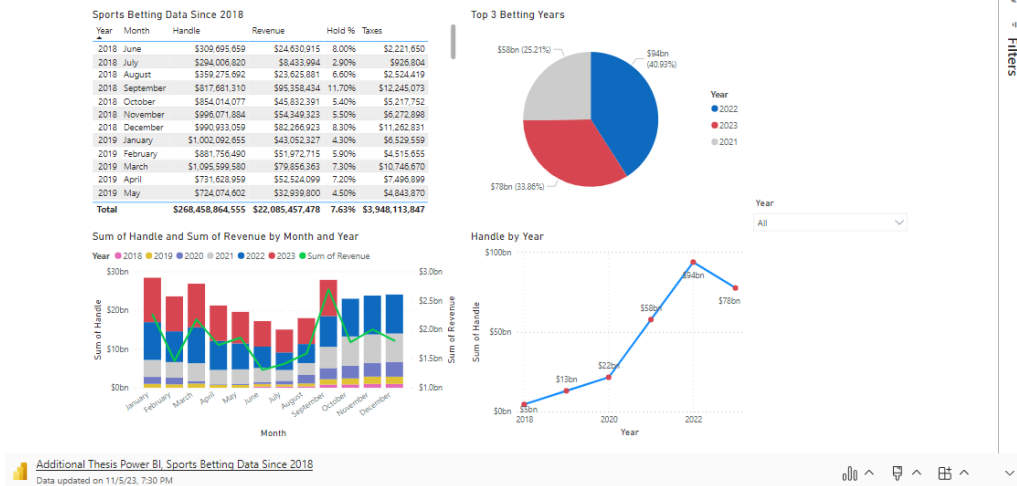


Figure 2.3: PowerBI of Total Sports Market by Month

## 2.2 Markets In Similar States to North Carolina

With North Carolina being next on the list to legalize and regulate sports betting, analyzing states neighboring North Carolina, or that may have similar markets might give an idea of what is to come. States that may have similar markets to that of North Carolina (once it starts in 2024) are Virginia and Tennessee. Both of these states have legalized online sports betting and neighbor North Carolina’s borders.

### 2.2.1 Virginia’s Sports Betting Market

Virginia legalized sports betting on April 22, 2020. Although legalized in April of 2020. Online sports betting did not kick off until January of 2021 [11]. Virginia is among the small list of states that launched a full virtual sports betting market. The market in Virginia may have launched virtually, but it will not stay virtual. There are plans for casinos that will be allowed a sportsbook license to accept bets in their facilities. The law that legalized sportsbooks allows for eighteen licenses with a clause that will allow relocating sports teams to acquire a license. Like many other states, to participate in sports betting in Virginia a person must be 21 years old [11].

It seems that Virginia lawmakers kept college sports front of mind when creating

the sports betting law. As of now, no betting on in-state college teams is allowed. This includes college prop bets. College prop bets are short for college proposition bets. These types of bets focus on the probability of certain events happening within a game or event. Since they are "college" prop bets, they involve games and events within the NCAA. These differ from traditional bets where the wager is simply the outcome of the game or event. Which usually involves winning, losing, or drawing. An example of college prop bets is player performance. This would be betting on how well or how bad a player may play in a certain game. An example would be how many yards a running back may get against their rival that weekend. Another example is team performance or statistics. This could be the total number of points scored in a football game, basketball game, etc. This could also be the first person to do a certain action, like get a rebound, score a touchdown, or even win the coin toss.

Virginia currently corrects a 15 percent tax rate on sports betting revenue. Of that tax revenue 2.5 percent is allocated to problem gaming initiatives and 97.5 percent is allocated to the state's general fund [11].

Below are the state's sports betting numbers through the end of August 2023:

**Virginia**

+

Month	Handle	Revenue	Hold	Taxes
January 2021	\$58,896,564	\$3,586,077	6.1%	\$39,710
February 2021	\$265,778,306	\$12,238,780	4.6%	\$300,594
March 2021	\$304,066,245	\$26,573,877	8.7%	\$1,183,488
April 2021	\$236,432,524	\$19,442,317	8.2%	\$1,652,147
May 2021	\$226,963,573	\$23,173,549	10.2%	\$2,381,116
June 2021	\$234,943,435	\$22,006,296	9.4%	\$2,273,995
July 2021	\$161,901,955	\$19,965,556	12.3%	\$1,864,433
August 2021	\$182,418,252	\$17,967,427	9.8%	\$1,378,540
September 2021	\$293,851,531	\$30,929,243	10.5%	\$1,557,499
October 2021	\$427,320,306	\$30,160,385	7.1%	\$1,746,204
November 2021	\$402,621,132	\$48,337,037	12.0%	\$4,233,167

December 2021	\$426,596,891	\$31,515,015	7.4%	\$1,729,130
January 2022	\$485,544,417	\$39,050,067	8.0%	\$2,876,609
February 2022	\$401,889,135	\$27,498,133	6.8%	\$1,406,280
March 2022	\$469,484,017	\$33,700,016	7.2%	\$2,116,289
April 2022	\$399,478,366	\$36,275,264	9.1%	\$3,040,327
May 2022	\$351,452,931	\$42,537,524	12.1%	\$3,896,270
June 2022	\$295,235,271	\$25,965,182	8.8%	\$1,871,961
July 2022	\$266,001,583	\$26,024,408	9.8%	\$3,060,304
August 2022	\$284,671,331	\$36,978,897	13.0%	\$4,474,132
September 2022	\$411,273,323	\$53,821,382	13.1%	\$7,257,403
October 2022	\$528,029,938	\$51,164,199	9.7%	\$6,956,643
November 2022	\$518,818,987	\$57,531,255	11.1%	\$7,782,639
December 2022	\$503,075,150	\$50,687,278	10.1%	\$7,026,829
January 2023	\$510,982,033	\$49,393,812	9.7%	\$6,368,899
February 2023	\$433,807,108	\$39,766,908	9.2%	\$4,682,125
March 2023	\$511,614,541	\$55,258,910	10.8%	\$7,413,213
April 2023	\$425,982,859	\$45,121,878	10.6%	\$5,799,965
May 2023	\$403,719,160	\$48,144,550	11.9%	\$6,285,305
June 2023	\$325,455,052	\$32,668,024	10.0%	\$3,939,701
July 2023	\$293,611,789	\$32,471,396	11.1%	\$4,115,218
August 2023	\$319,005,942	\$32,359,888	10.1%	\$4,155,221
<b>Total</b>	<b>\$11,360,923,647</b>	<b>\$1,102,314,530</b>	<b>9.7%</b>	<b>\$114,865,353</b>

<https://www.legalsportsreport.com/sports-betting/revenue/>

Figure 2.4: Virginia Sport Betting Market Revenue as of August 2023

### 2.2.2 Tennessee's Sports Betting Market

Tennessee legalized sports betting on May 24, 2019. Unfortunately for people interested in sports betting in Tennessee, it took eighteen months to finalize the launch of online betting which happened in November of 2020 [14]. Like Virginia, Tennessee is an online-only betting state, however, unlike Virginia, there are no retail casinos nor plans to build any within the state. Although the market in Virginia started later, when compared to Virginia, Tennessee brought in almost five times the amount of money in the betting handle than that of Virginia. Virginia's first month, January 2021, brought in close to 59 million dollars, while Tennessee just 2 months earlier brought in close to 131.5 million dollars in sports handle [9]. With Tennessee's tax rate being higher, they also brought a significant amount more in tax revenue when compared to VA. Like other states a person must be twenty-one years of age or older to engage in sports betting.

Like Virginia, Tennessee also kept college sports integrity in mind and does not allow for college prop betting. However, it is legal for bets to be placed on professional AND college sports in Tennessee unlike in Virginia. Further restrictions for bettors in Tennessee call for those who have close association with leagues and sports teams to not bet on their teams [14]. It is illegal for them to do so.

Tennessee currently has one of the highest tax percentages on sports betting in the entire country. They currently tax sportsbook companies 1.85 percent of the sports handle, not the revenue [14]. That means 1.85 percent of the total money wagered goes to the state. Along with the higher tax percentage, they are the only state that requires sportsbooks to have a minimum of 10 percent hold [14].

Below are Tennessee's sports betting numbers from November 2020 through August 2023:

**Tennessee**

+

Month	Handle	Revenue	Hold	Taxes
November 2020	\$131,444,523	\$13,224,908	10.1%	\$2,363,918
December 2020	\$180,900,000	\$13,900,000	7.7%	\$3,080,000
January 2021	\$211,300,000	\$20,900,000	9.9%	\$4,300,000
February 2021	\$176,300,000	\$13,000,000	7.4%	\$2,600,000
March 2021	\$205,900,000	\$18,000,000	8.7%	\$3,200,000
April 2021	\$172,400,000	\$15,500,000	9.0%	\$2,800,000
May 2021	\$160,900,000	\$15,400,000	9.6%	\$2,700,000
June 2021	\$174,500,000	\$18,300,000	10.5%	\$3,200,000
July 2021	\$144,559,000	\$15,172,000	10.5%	\$2,600,000
August 2021	\$144,500,000	\$13,200,000	9.1%	\$2,000,000
September 2021	\$257,300,000	\$25,600,000	9.9%	\$3,300,000



October 2021	\$375,300,000	\$23,300,000	6.2%	\$3,400,000
November 2021	\$365,700,000	\$36,900,000	10.1%	\$5,900,000
December 2021	\$341,800,000	\$24,600,000	7.2%	\$3,300,000
January 2022	\$386,059,756	\$36,249,453	9.4%	\$5,817,504
February 2022	\$313,298,305	\$20,945,018	6.7%	\$3,026,574
March 2022	\$370,230,004	\$26,520,468	7.2%	\$4,550,242
April 2022	\$292,796,670	\$27,142,800	9.3%	\$4,649,129
May 2022	\$261,582,468	\$27,315,928	10.4%	\$4,766,458
June 2022	\$215,774,186	\$15,855,649	7.3%	\$2,559,649
July 2022	\$182,769,323	\$18,174,226	9.9%	\$3,668,804
August 2022	\$205,863,860	\$27,200,883	13.2%	\$4,875,847
September 2022	\$336,933,437	\$46,285,200	13.7%	\$8,716,963

October 2022	\$405,337,575	\$37,295,159	9.2%	\$6,989,818
November 2022	\$439,456,908	\$47,248,222	10.8%	\$9,030,021
December 2022	\$440,445,414	\$49,176,885	11.2%	\$9,401,952
January 2023	\$410,773,606	\$41,392,586	10.1%	\$7,269,600
February 2023	\$327,326,201	\$33,943,931	10.4%	\$6,380,150
March 2023	\$392,667,304	\$45,506,700	11.6%	\$8,752,898
April 2023	\$318,416,216	\$34,257,592	10.8%	\$6,435,653
May 2023	\$279,794,996	\$37,097,192	13.3%	\$7,145,077
June 2023	\$230,337,515	\$25,526,655	11.1%	\$4,635,761
July 2023	\$214,114,055	\$21,411,406	10.0%	\$3,951,411
August 2023	\$243,456,822	\$24,345,682	10.0%	\$4,462,942
<b>Total</b>	<b>\$9,310,238,144</b>	<b>\$909,888,543</b>	<b>9.8%</b>	<b>\$161,830,371</b>

<https://www.legalsportsreport.com/sports-betting/revenue/>

Figure 2.5: Tennessee Sport Betting Market Revenue as of August 2023

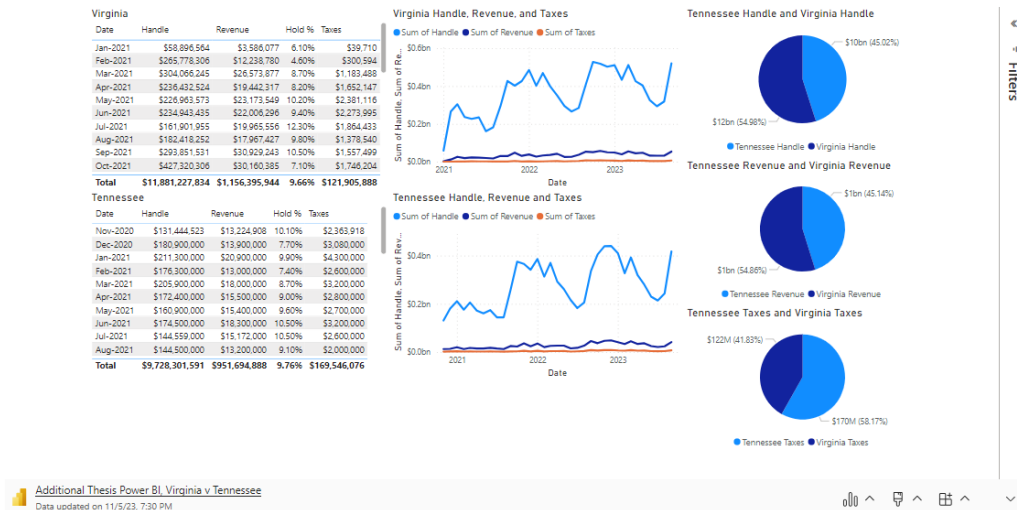


Figure 2.6: PowerBI Analysis of Virginia v. Tennessee Markets

Above is a PowerBI analysis comparing the Virginia and Tennessee Markets

## 2.3 Factors Contributing To Rise In Sports Betting Revenue

The continuous advancement in technology, particularly devices that have access to the internet has aided the sports betting market in growing at such a rapid rate. In the United States alone, 92 percent of the population has access to the internet [12]. With the US population being at an estimated 338,289,857 people, it can be assumed that those legally allowed to participate in sports betting have created a growing demand for it.

The abundant availability of smartphones is also a driving factor in the sports betting market. As phones continue to improve, the standard for lower-end phones continues to increase [12]. This can be seen in the 2000s when the standard phone entry-level phone went from a flip phone to a touch screen phone with internet access. With the rise in recent years of 5G internet access, it may come as no surprise that 5G will eventually become the standard for entry-level phones as well. Why is this important? With access to better technology, both consumers and providers win. Consumers get faster access to updates whether in the sports betting experience within an app, or real-time data that allows them to bet on whatever they choose. Providers on the other hand will have the technology available to develop enticing, interactive, and immersive experiences that will drive consumers to want to engage with their apps more often, therefore generating revenue from bets or ads [12]. Shortly, it is speculated that augmented reality, artificial intelligence, and machine learning will be major driving factors in the sports betting experience.

Virtual reality is a technology that is already being implemented within the gambling market. With VR allowing for highly stimulating experiences, it would be no surprise if sports betting eventually allowed bettors the chance to experience their bet "in person" via virtual reality. As of now, VR is a casino type of gambling play, where users can see other players, and dealers, and have a much more immersive experience with sound and realistic graphics that make them feel as if they were in a Las Vegas casino or any other casino around the world [12].

Another technology that has recently taken a backseat but may yet play a big role in the sports betting market is cryptocurrency. With the adoption of blockchain technology, sportsbooks are now allowing payments or bets to be made using different cryptocurrencies [12]. This allows for faster transactions between the sportsbook and a crypto wallet, and a faster centralized experience for crypto traders who also dabble in sports betting.

### **2.3.1 What Should A Bettor Do To Minimize Losses**

To minimize losses, or increase the odds of winning, a bettor must consider several things. Their knowledge of the sport they choose to bet in and also their knowledge of the teams or players that play said sport. It can almost be treated like investing since research and knowledge play such an important factor. Placing a blind bet on a sport or player that is unknown to the better can be fun and exciting, however the odds of that bet winning are low if the odds are against them. Then again this is how some of the incredible betting stories happen.

There are plenty of online resources now that keep up with odds, cover players' statistics, and even team statistics and day-to-day information. With the wealth of knowledge available a better can be more equipped to make a bet they feel comfortable with.

Odds are the most important thing when deciding to make a bet. A better is more likely to bet if their favorite fighter or team is the underdog, meaning they can win money if they "ride or die" with their favorites. Who set the odds? The ones in charge of setting the odds are known as bookmakers, and they take a variety of factors into account. These bookmakers work proficiently with sportsbook platforms, not all odds on different platforms are the same for the event.

### **2.3.2 Common Sports Betting Definitions**

- Point Spread - This is a handicap to even the field. Not all teams are powerhouses or favorites, so in some sports bets there are point spreads that help underdogs in situation where they might lose, but if it's by less than the point

spread, they still win the bet.

- Moneyline - Moneyline bets are betting on a team to win. The payout of moneyline bets is based on the odds. If the odds are positive, the team, fighter, etc are underdogs. Positive bets also show how much you can win if you bet 100 dollars. Negative odds indicate a favorite, meaning bookmakers like that team, fighter, etc to win. Negative odds are how much money you have to bet to win 100 dollars. This indicates that you must risk more to earn less and vice versa for positive odds.
- Over/Under (Total) - As the name indicates, this is a bet on whether the total of a certain event will be over or under the indicated number. Examples include the total points scored, or punches thrown in a fight.
- Futures - These are bets placed on a future outcome happening, usually a team winning the championship in their respective league.
- Parlay - This is an index fund of bets per se. This places a bet on different events happening. These events or outcomes do not have to be in the same league or even the same sport. These types of bets offer higher profit but at a much higher risk or lower probability of all outcomes being true in favor of the bet.

### **2.3.3 Best Sports To Bet On**

Depending on who is asked, there may be a difference between the answers provided on which is the most profitable sport to bet on. The standout however seems to be football. Just on a sheer numbers game, college football is the winner [13]. Every year there are thousands of college football games played across the country. Now as mentioned earlier it depends on whether a state allows betting on college football, but if it does, the pool of possible betting opportunities widens dramatically. If college football is not an option, the National Football League is the runner-up regarding return on investment. There is extensive data on teams' performances, players' statistics,

historical data, and sports news coverage for bettors to get educated on what teams and players are in form prior to making a bet [13]. The NFL is also a sports league in which the favorites do not lose as often as in other sports, so there are not too many upsets [13]. The same goes for college sports. The bigger schools get better recruits and therefore win more often.

Soccer, or Futbol, is the most popular sport in the world. Its recent rise in popularity in the United States will surely make it a booming sports betting market as well. The market for now is much larger in Europe and other parts of the world. One key call out that in soccer you can bet on ties, whereas in football, there is rarely ever a tie.

Boxing's popularity in the United States pales in comparison to what it used to be, however with the rise of celebrity matches, and more promotion, it may be back on the rise [13]. The one thing that stayed true in regards to boxing, is how profitable it can be to bet. Like soccer, there are not too many different outcomes which makes it very straightforward. The other thing is that sport is year-round, therefore there is always an opportunity to bet on boxing or other combat sports.

Basketball is another very popular sports all over the world. However, in basketball, even the best teams can lose since they have so many games during the year, they may rest their starters as they use load management for the playoffs [13]. In this case, it is said that during the regular season, it may be better to bet on underdogs and on favorites once the playoffs start [13].

### **2.3.4 Incredible Sports Betting Stories**

One of the most recent stories of odds being overcome comes from the English premier league where Leicester City won the championship. Their win was nothing sort of amazing considering they were 5000 to 1 underdogs. This means that a better could have placed a 1 dollar bet and potentially won 5,000 dollars. Several Leicester fans did indeed place bets and won big.

Another story comes from the Professional Golfers' Association of America where in 2019 a man by the name James Adducci bet that Tiger Woods would win the

Masters tournament at 14-1 odds. This was not a small bet, as he bet 85 thousand dollars, and when Woods won, cashed out almost 1.2 million dollars.

These are just two examples that show that although unlikely, these types of events can happen in sports. Bets that are unlikely to happen pay off since sportsbooks do not count on them happening. In essence, this is free money to the sportsbooks. It is always thought of how incredible is it when an unlikely bet hits, but rarely are the stories told of how many bettors bet on unlikely events and lost their money. It is a high-risk high-reward game. Responsible and well-informed betting can help minimize financial loss and can keep bettors out of trouble. Although there are instances where gambling does become an addiction.



## Chapter 3 Gambling and Sports Betting Studies

There have been multiple studies carried out on gambling and sports betting. Most of them aim to identify tendencies of bettors, game-related variables, and co-occurrence of certain activities while betting, mainly substance and alcohol usage. Most of these studies started in the early 2000s until recent years. Even if a researcher wanted to do a study specifically on the online sports betting market, it would have to be years before it could achieve the same level of data collection as studies already done as it has only recently taken off.

### 3.1 Gambling Disorder

Gambling disorder is an uncontrollable urge to gamble despite any negative consequences or events that may result from it [15]. It is also known as compulsive or pathological gambling and is classified as a behavioral addiction in the Diagnostic and Statistical Manual of Mental Disorders [15].

To be diagnosed with gambling disorder an individual must feel a need to gamble, often with increasing amounts of money. Another indicator of gambling disorder is having attempted to stop gambling and being unsuccessful in doing so. Individuals who feel restless or an urge to bet or gamble more often when they cut down, are clear candidates for gambling disorder designations. Usually, these individuals use gambling as a coping mechanism or a way to get away from their problems [15].

Gambling disorder can range from a mild case to a severe case. According to professionals, severity is a key diagnostic to administer the correct treatment [15]. Although addiction percentage ranges depending on country, state, and even culture it is estimated that one to two percent of the population has some form of gambling

disorder [15].

Although the Diagnostic and Statistical Manual does not designate certain types of gambling as higher risk, there is evidence pointing to certain types of gambling as putting individuals at greater risk of developing gambling disorders. Individuals who participate in online sports betting are classified as vulnerable because of the higher proportions of younger, single, and lower socioeconomic status within online sports bettors [15]. All of the individuals who fit into these categories can often develop substance use disorders, psychological distress, uncontrollable impulsive behavior, and reward dependence [15]. The evidence that online sports betting has an increased amount of participation from younger individuals is cause for concern since younger individuals (adolescents and young adults) represent a population that is at higher risk of developing gambling problems.

## **3.2 Social and Demographic Characteristics of Sports Bettors**

According to several studies, sports betting is highly associated with the sex of individual bettors with young single males representing a higher percentage of the sports betting population [15]. This population is prone to engaging in both sports betting and sports fantasy leagues which sometimes have a monetary requirement to participate. Some studies took a look possible correlation between substance abuse and sports betting while keeping the sex of individual bettors in mind. In these studies, female bettors had a weak correlation between the two activities while their male counterparts had a stronger positive correlation [15].

There have been numerous attempts by studies to define a certain type of individual, or phenotype, that engages in sports betting by considering multiple pairs or groups of social and demographic factors [15]. As mentioned earlier, sports bettors tend to be males who are single and younger than nonparticipants. Other characteristics of online sports bettors include a college education, so they tend to have full-time jobs with higher salaries which means more disposable incoming [15]. These bettors

also tend to bet a higher percentage of their income. It is reported that individuals who bet on a frequent basis were males with higher social status, however, males with low education levels were also implicated at a similar level of frequency [15].

### **3.3 Other Forms of Gambling and Sports Betting**

There has been an association between other forms of gambling and sports betting. When individuals participate in other forms of gambling such as the lottery, slot machines, and even participation in sports have all been indicators that said individual has a higher probability of participating in sports betting.

When compared to other forms of betting, sports betting tends to have much higher stakes. The wagers placed on sports betting are higher than those placed on non-sport bets. In a study done in 2020 by Anders Hakansson and Carolina Widinghoff, it was found that when live sports betting is paired with online casino gambling individuals are more likely to report over-indebtedness [17]. This occurrence was not found when it was only live sports betting.

#### **3.3.1 Debt and Problem Gambling Study**

Anders Hakansson and Carolina Widinghoff conducted a study called Over-Indebtedness and Problem Gambling in a General Population Sample of Online Gamblers in which they conducted an online survey and gathered data from 1,004 online gamblers. The data they collected included problem gambling symptoms, 30-day gambling activity financial loss from gambling, information on the history of debt because of gambling, foreseeable debt in the future, and social demographic data [17].

The participants in the study came from the general population and had gambled at least ten times online in the past twelve months [17]. The study was conducted using participants from Sweden. Below is the basic social demographic information of the participants.

	n	%
Gender		
- Male	786	78
- Female	218	22
Age		
- 18–24 years	41	4
- 25–29 years	79	8
- 30–39 years	220	22
- 40–49 years	227	23
- 50–59 years	219	22
- 60–69 years	141	14
- 70 years and older	77	8
Living conditions		
- Alone with children	66	7
- Alone without children	231	23
- With partner and children	376	37
- With partner, without children	307	31
- With parents	24	2
Main occupation		
- Student	47	5
- Working	727	72
- Job seeking	29	3
- Retired	170	17
- Other	31	3
Highest level of education		
- Mandatory primary school	71	7
- High school	447	45
- University studies without full degree	154	15
- Full university degree	317	32
- Other	15	1
Daily tobacco smoker or “snuff” user		
- Yes	406	40
- No	592	59
- Wish not to answer	6	1
Ever prescribed pharmaceuticals or psychotherapy for psychological distress		
- Yes	214	21
- No	780	78
- Wish not to answer	10	1
Ever felt a need to seek treatment for problem gambling		
- Yes	60	6
- No	936	93
- Wish not to answer	8	1
Ever felt a need to seek treatment for alcohol problems		
- Yes	65	6
- No	929	93
- Wish not to answer	10	1
Ever felt a need to seek treatment for drug problems		
- Yes	34	3
- No	962	96
- Wish not to answer	8	1

<https://www.frontiersin.org/articles/10.3389/fpsy.2020.00007/full>

Figure 3.1: Sample Characteristics from Hakansson and Widinghoff’s study

	<b>n</b>	<b>%</b>
Online casino	341	34
Live sports betting	542	54
Online horse betting	400	40
Online poker	179	18
Online bingo	161	16
Sports betting—non-live	605	60
Land-based casino	90	9
Land-based horse betting	219	22
Land-based poker	93	9
Land-based electronic gaming machines	104	10
Gambling for money within video games	79	8

<https://www.frontiersin.org/articles/10.3389/fpsy.2020.00007/full>

Figure 3.2: Past 30 day gambling activity from Hakansson and Widinghoff's study

One basic information was collected from the participants, they were asked about their last 30 days of gambling activity. It was discovered that 177 participants, approximately 18 percent of the group, reports participating in both online casinos and live betting. 164 participants, 16 percent of the groups population, reported online casino activity but not live betting [17]. 36 percent or 365 participants reported live betting and no online casino activity, while 298 (30 percent) participants reported no participation in either activity [17]. Above is the expanded data gathered.

After concluding their study, Hakansson and Widinghof concluded that there is still more to be learned about gender disparity within gambling. According to the data they gathered, gamblers in Sweden did not follow the traditional curve when it comes to the male gender and problem gambling and/or debt [17]. There was actually a bigger presence of the female gender associated with problem gambling and debt than expected, hence their conclusion [17]. During their study they also ran into findings that pointed to higher education leading to more gambling activity, which has been seen in some of the previous information, but so has lower education [17]. There is still more to learn about multiple factors and their role in problem gambling and debt.

### 3.4 In-Play Sports Betting: A Sign of Gambling Disorder?

Because of the advancement of technology and its use in the sports betting market, one of the most popular features of many sportsbook apps is in-play sports betting features. "In-play" refers to events that may happen within a specific game [16]. One of the more popular among the in-play betting features is "cash-out" which allows the better to cash out or settle their bet before their event is completed. Sometimes it is used by bettors to secure part of their potential winnings, and sometimes it is used as a stop loss to mitigate their losses [16]. The introduction of in-play betting has given bettors a sense of control. Sometimes it is more of a sense of control or illusion since they are lured into the moment or marketing of in-play betting [16].

Example: If you bet your favorite team to win, the sports betting platform with which you placed the bet may offer you 70 percent of your potential winnings for you to cash out. If you don't take the cash-out option and your team loses, you do not win at all, but if you do you win a smaller portion of the winnings. Some bettors like this option and take the winnings and others ride it out until the end knowing that they may lose out on winnings and their initial investment in the bet.

Several studies have been conducted to analyze online gambling behavior. Since 2006 these studies have been able to use behavioral tracking data provided by gaming platforms and operators. The article written by Griffiths and Killick reviewed over 400 records across two databases. After sifting through said records over 2000 papers were identified as potential candidates for their review which was focused on in-play sports betting with thirteen of these including empirical data and the other three were theoretical or were commentating on in-play sports betting [16]. Below is a summary of each of the more relevant studies.

- Richard LaBrie conducted a study in which he focused on examining online sports gambling behavior using data from Bwin. His study analyzed 40,499 subscribers to the Bwin gaming platform over a period of eight months. After

concluding his study, it was found that in-play sports bettors were more likely to be more involved bettors than fixed-odds bettors. [16]

- Braverman and Shaffer (2010) also studied subscribers from Bwin. Their primary goal was to identify markers or predictors of future gambling problems for in-play bettors. They used 530 subscribers who later closed their accounts due to gambling-related issues. From their study, they concluded that those who closed their accounts showed high variability of bets and wager sizes during in-play betting. However, they did speculate that there could have been external factors that could have influenced their subscriber sample pool. [16]
- Brosowski, T., Meyer, G., and Hayer, T (2012) focused their study on the potential association between participating in different gambling activities and at-risk gambling. They took a look at data from eight different gambling types across 27,653 bwin subscribers. The study concluded that subscribers who participated in in-play sports betting or poker were significant predictors of at-risk gambling. They stated their limitations included lack of data from other gambling platforms, and marketing incentives potentially having enough influence to make a difference. [16]
- Xuan and Shaffer (2009) looked at the activity and behavior of 226 Bwin subscribers before they ultimately closed their accounts. The question was if there were signs that in-play betting was a hint or marker for subscribers who would later close their accounts. Their findings concluded that in-play betting was indeed a marker for those who closed their accounts as they were involved in higher-stakes gambling and also had higher losses. However, their study lacked a higher sample of subscribers since it focused on a smaller subset of gamblers. It was also unable to take into account other gambling activities which may have also influenced subscribers' decisions to close their accounts. [16]

## Chapter 4 Marketing The Betting Industry

As the sports betting industry has grown so have the amount of sports betting platforms. Besides economic regulations are there any regulations on them regarding targeted marketing to susceptible groups of people? This chapter will discuss the rapid growth of advertising that is causing concern about its impact on society.

### 4.1 Common Regulations On Advertising Sports Betting

Although regulations differ from state to state there are some common regulations that most if not all states share when it comes to sports betting and gambling laws.

Many states require sports betting platforms to include a message urging bettors and subscribers to practice responsible gambling. This message can include information regarding problem gambling resources and the risks associated with betting. This type of message is also commonly seen with alcohol and tobacco products either in a warning or consuming responsibly [18]. Along with presenting the risk associated with betting, many regulations also include language around accurately representing the odds, potential winnings, and terms and conditions of any promotions [18]. These promotions may include free bets and bonuses, which are required to be presented transparently and responsibly to protect potential bettors.

Some states also regulate the frequency and placement of sports betting advertisements to prevent overexposure. Their main focus is limiting frequency during live sporting events at both a professional and collegiate level across all leagues and sports [18]. A lot of sports broadcasts and even shows have started including over/under and favorite odds on their shows, so some regulations may address these situations



as well [20].

Part of the massive advertising efforts of the sports betting platforms include celebrity endorsements. Whether it is a sports figure, movie star, or celebrity numerous advertisements involve these individuals targeting their fans to "be like them" and bet. The use of famous figures may be subject to regulations and restrictions in some states.

The use of celebrity endorsement is especially questionable, yes it is a part of 21st-century advertising efforts, however, it should raise concerns about targeting susceptible audiences.

## 4.2 Sports Betting Platform Partnerships

Some of the biggest sportsbook platforms include BetMGM, DraftKings, and FanDuel. These platforms are always looking to increase their market share by making strategic partnerships with key partners. Professional sports leagues and sportsbooks have created partnerships that do not seem like they will be going away any time soon. These contracts or partnerships typically involve license use of league data for players and teams and the use of the league's logo and teams' logos [21]. This partnership benefits both parties involved. Since sportsbooks use real-time data and official logos, it makes them more popular among potential subscribers [20]. The leagues benefit from the additional revenue they receive from the licensing fees they charge for the use of data and their logos [20]. The leagues that partnerships with sportsbooks are listed below [21]:

- Major League Baseball
- Major League Soccer
- NASCAR
- National Basketball Association
- National Football League

- National Hockey League
- PGA Tour
- UFC
- Women’s National Basketball Association

Not only have professional sports leagues associated with sports betting platforms but so have media companies. Where there used to be a slight reference to gambling, there is now a clear connection to sports betting being broadcast to millions of audience members. As mentioned earlier there are specific shows dedicated to sports betting analysis with topics such as point spread and over/under. ESPN and some other channels even include a favorites and underdogs ticker or tracker at the bottom of the screen during a lot of their broadcasts [21].

Along with professional sports leagues, some colleges have also sparked partnerships with sports betting platforms. There are only a few and they are currently only in states where sports betting is allowed, but as more states allow sports betting, this may be just the tip of the iceberg.

#### **4.2.1 College Sportbook Partnerships**

Because of the partnership deals that some sports betting platforms have with colleges, they are allowed to, directly and indirectly, market their platforms and services to students [20]. This decision by colleges has drawn a lot of criticism for putting the school’s profit before a student’s education and safety. Critics of the decision have suggested that this type of partnership exposes students, who are statistically more likely to develop signs of problem gambling, to sports betting and put it at their fingertips [22]. This decision has been compared to the hypothetical equivalent of colleges having partnerships with alcohol and tobacco companies [22]. Notably, most states that currently allow sports betting require a participant to be at least 21 years of age, meaning that a hefty amount of the student population who are underage (in terms of sports betting) have been overexposed to these companies’ efforts on campuses.

Michelle Malkin, an associate professor of criminal justice at East Carolina University, who also researches problem gambling and gambling-motivated crime says, "When it comes to young people, emerging adults, those people on college campuses, there's just not that information out there on how to engage in gambling healthily. The problem is that most young people wouldn't know what the signs are to say that they have a problem with gambling because all their friends are doing it, too." [22]

Some defend these types of partnerships, saying that schools are not doing this with negative intent, and that "it is like doing business with any other company". These same supporters argue that college athletic departments are always looking out for revenue streams that can help them fund their programs. [22]

It seems that those who are making these decisions, whether the board, the chancellor, or a combination of everyone in charge see these types of partnerships as an opportunity to recoup the revenue they missed out on during the covid-19 years. [22]

Because of these recent partnerships, the American Gaming Association has revised its standards for "responsible marketing" in which they disallow certain partnerships with colleges. These changes also prohibit AGA member sportsbooks from having a partnership with universities [22]. They also disallow the use of language such as "risk-free" and "free bets" by their member sportsbooks. This of course only applies to the member sportsbooks of the American Gaming Association, so if a sportsbook is not a member, these rules do not apply to them.

Eight or more universities have agreed to terms with sports betting platforms. The New York Times also reported that "at least a dozen athletic departments and booster clubs have signed agreements with brick-and-mortar casinos." [22] It is also reported that through these contracts these platforms have written language allowing them to directly contact students through their emails inviting them to participate in their platforms, and enticing them with bonus offers.

There are some companies however uninterested in tapping into the student community for potential subscribers. FanDuel's CEO Amy Howe has stated that their company is not interested nor will they be marketing to college students [22].

## 4.2.2 Additional Risk For Susceptible Audiences

Around six percent of students identify with having signs of problem gambling according to the Center for Responsible Gambling [22]. This is only for students who self-identify, not necessarily those who may fall under the classification based on their gambling habits. As is commonly known, most college students have lower financial stability and therefore may engage in the lottery or gambling as a means to earn more money and help themselves out [22]. They usually however end up damaging their situation even more.

A national survey conducted by the National Council on Problem Gambling in 2021 revealed many young people in general have engaged in problematic gambling. The rate was higher in male respondents which supports the information discussed in earlier chapters [22].

With young people being more susceptible and at greater financial risk, critics call out that if a university is to make money from sports betting platform partnerships, they should allocate a significant amount towards problem gambling resources to help students [22].

In a statement released by the NCAA they announced that they have partnered with EPIC Risk Management "to provide a comprehensive gambling harm and student-athlete protection educational program for its members". No specifics about the educational programs contents were revealed. [22]

## 4.3 The Truth About "Free" Bets on Sportsbook Apps

There are many sports betting platforms that have gotten away with inducive marketing with phrases such as "we will match your deposit", "risk-free bet", and countless "cannot miss bonuses". Some of these examples include BETMGM offering Michigan customers a "risk-free first bet" of up to 1000 dollars, or Barstool offering Maryland customers 1000 dollar "bonuses" for betting their first dollar [23]. There have even

been mentions of monetary values of up to 7500 dollars. These marketing campaigns have been used across the industry and have worked to engage and entice new subscribers. However, once signed up, even those who place these "risk-free" bets can still lose all of the money they initially deposited [23].

Sportsbook platforms at one point were giving away money in the form of deposit matches to bring in new customers, but now most if not all platforms are filled with complicated language that allows for misconceptions [23]. Of course, as bettors get better at reading into these promotions and their fine print, veterans are able to exploit them, the same cannot be said for newcomers [23].

An example given in an article written by Danny Funt of the Washington Post gives an idea of how these "risk-free" bets really work. If someone places a one thousand dollar "risk-free" bet with BetMGM as the platform, they initially deposit one thousand real dollars into their account. They then wager these one thousand dollars, if the bet wins, the winnings are paid out as they usually are with no additional prizes or bonuses. If this bet loses, the "risk-free" part kicks in and the bettor is credited with five two hundred dollars "free bets". These free bets are usually set to expire within a week and they are also not paid out with any winnings. This means that a two hundred dollar free bet at even odds is only paid out at one hundred and ninety dollars, not the full two hundred, highlighting the built-in advantage for BetMGM. In the grand scheme of things, this means that if a new subscriber wins all of their free bets, they only win nine hundred and fifty dollars. To put into perspective, the chance of this subscriber winning all five of their free bets is a 1 in 32 chance [23]. If they lose all of their free bets, then they lose their initial one thousand dollar deposit [23].

Another example of misguiding offers includes one from DraftKings who at one point offered a twenty percent deposit bonus for new customers. This to anyone who read it would indicate a one thousand dollar bonus for a five thousand dollar deposit, in reality, the fine print tells otherwise. After the five thousand "each dollar of bonus money can only be accessed by betting twenty-five dollars on odds longer than -300" [23]. This of course means betting in twenty-five dollar increments on bets that are

very unlikely to win. The article by Danny Funt estimates that someone who bets twenty-five thousand dollars would only come away with one hundred and thirty-five dollars even with the one thousand dollar bonus [23].

This, in many critics' eyes, is not a definition that satisfies what it means to be "risk-free". However, there are people who defend this such as the Division of Gaming Enforcement in New Jersey [23]. They argue that the use of this type of language is acceptable because the terms and conditions specify that any losing bet will be returned in some fashion [23].

Language used by the sportsbook platforms is not done by mistake or on a hunch, the term "risk-free" was commonly used even though "on the house" was known as a more honest marketing term [23]. As of summer of 2022, some sportsbooks have changed their language from "risk-free" to "no sweat" and it seems to be receiving the same level of criticism.

## Chapter 5 Conclusion

With only six years of true sports market data, there is not yet enough data to have sample sizes large enough to have thorough studies like some of the studies mentioned in Chapter 3. There will be undoubtedly organizations and researchers who collect surveys and data over the years to help predict problem gambling or at least recognize it at an early stage.

### 5.1 Limitations and Future Research

The limitations of this research were the same as some of the studies' limitations mentioned earlier. The data available is lumped in with all gambling and does not just focus on sports betting. There are no studies or models that show correlations between online sports gambling and bankruptcies or even homelessness.

Another limitation is that most of this data depends a lot on self-identifying sample participants. As the research showed, the majority of people are highly susceptible and may not know how to tell the signs of problem gambling. Even if they did, they may not identify with it as most continue to participate as a means to try and get out of debt.

One of the ideas floating around when starting this research was finding the correlation if any between the rise of sports betting revenue, or handle, and the number of bankruptcies declared that particular month. The same could be done with the correlation between the revenue or handle and the rise in the homeless population. This could help determine if there is a direct relationship and could help persuade lawmakers to allocate more than they currently are for gambling addiction resources.

## 5.2 Holding States Accountable

With the industry growing at such a fast pace since the decision on Murphy vs. NCAA, sports betting will undoubtedly be available in all states in the future. It will be important to hold state politicians and lawmakers accountable to not be strong-armed by these companies into allowing them to put their subscribers at risk.

States should also keep in mind those at high risk of problem gambling such as college students and make sure that they are protected from being overexposed and in a way groomed by these sportsbook platforms. With this being said there should be more resources put towards not only problem gambling help, but also prevention. Whether it be free educational courses, or making the sportsbook companies put a cap on bets for college students. Another idea would also be to require sportsbook platforms to create an approved video or experience that informs its subscribers how to safely bet and is transparent about both odds and offers.

If sportsbook companies continue to grow at the rate that they are, they will undoubtedly gain popularity and may even end up with the capacity to lobby or persuade lawmakers in their favor, therefore it will be pertinent to hold state legislatures accountable to protect their citizens from money hungry companies as they do with other industries.



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