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Seeking Returns as a Sports Bettor: An Overview of the Sports Betting Landscape and Strategies
to Capitalize off of a Lucrative Industry

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ABSTRACT

The sports betting market has grown tremendously in recent years and offers opportunities for sports fans to capitalize on their knowledge of leagues and teams. The potential for increased profitability may exist as a result of successfully implementing strategies and identifying market inefficiencies that could ultimately yield returns for those assuming the risks through specific wagers.

The following research delves into the aspects of sports betting, providing an overview of this thriving industry and researching common strategies in order to potentially uncover opportunities for profitability. The research within this thesis focuses on four strategies including middling, betting on trends, the Martingale system, and betting against the public. The statistical analysis completed on the latter three strategies portrayed that each strategy was in fact profitable.

For betting on trends, I chose to complete an analysis on NFL teams which are underdogs of 10 or more points. After compiling data of each team's last 30 games (or however many applicable games based on how many times this instance occurred) of being a 10+ point underdog, it was revealed that the underdog covered the spread 54.65% of the time. As for instances where a team was a 10+ point underdog in a home versus away game, the results were a 57.01% and 52.39% cover percentage, respectively. For the Martingale system, I again chose to create a model based off of NFL results, betting on each NFL team to cover the spread weekly, doubling the original wager until the team covered a spread. Using results from the

2022-23 season, I found that the strategy worked in just four weeks, returning a profit of \$3,200 for a \$100 unit bettor, or a 30.19% rate of return on the upfront capital needed to carry through with the strategy for the four weeks. Lastly, in order to see how betting against the public perception of a game outcome would prove profitable or not, I tracked the public betting percentages and spreads for the first round of the 2023 Men's NCAA Tournament. Betting against every team fielding the higher percentage of wagers, this strategy posted a record of 18-14, for a 28.6% rate of return.

The analyses above lead to the conclusion that with the assistance of prior data, certain strategies may aid a bettor's profitability, but should be further examined with larger sample sizes in order to determine whether any of these strategies have statistically significant results, ultimately returning consistent profits over a period of time.

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Chapter 1

Introduction

Within the sports betting industry, sportsbooks offer bettors the opportunity to test their predictability of sports contests with financial rewards for choosing the correct outcome. For bettors, whether their wagers prove to be successful or not, they are making wagers with the assumption that they have a fair opportunity to win or lose based on the odds put forth by the market. Similar to trading stocks, bettors take on a certain amount of risk as they place different bets but are compensated with the potential for higher returns on riskier wagers. In this sense, and considering the possibility of making a profit, it's important to consider how fair the market is in which you are playing. In financial markets, this phenomenon is known as the efficient market hypothesis. This theory states that available share prices reflect all publicly available information, eliminating the ability to capitalize on undervalued stocks or profit from selling inflated shares of stock.

In sports betting, one could argue that the factors that go into a game line or spread are also determined by the participants that will engage with them. At first, sportsbooks attempt to set a line that accurately estimates the potential outcome of an event, in hopes of garnering a similar number of wagers on each side of the line. By doing so, the book reduces its risk by hoping to have as close to 50% of the wagers on one side of the line and 50% on the other in order to assume no losses, pay the winners with the losers' stake, and incur the fee or "juice" associated with each winning bet. The term juice refers to the percentage of a wager that a sportsbook will keep. For example, if a wager on the Dallas Cowboys is made at a spread of -10

points, the odds for either that bet or a +10 point bet on their opponent could both be -110, which means that a sports bettor would have to wager \$110 to net \$100 or any amount of money they choose which will ultimately return ~91% of their original stake, plus their original stake (for odds of -110).

For the duration of time between when a line is set and when the event starts, sportsbooks will often move the line or adjust the odds based on the handle, or number of wagers, placed on one side or another. For this reason, market players, or the sports bettors, contribute to the efficiency of the market, as betting activity ultimately helps in determining where the true betting line should stand according to public perception. In this capacity, it's evident that sports betting markets act similarly to financial markets as the price of a share of stock is determined by the bid and the ask, or what one investor is willing to pay for a share versus what another investor is willing to sell for. However, research completed by Tobias Moskowitz, a professor of finance at Yale, suggests that returns in the sports betting market are a fraction of those in financial markets, failing to overcome transaction costs, preventing arbitrage from eliminating them.

With this in mind, combined with the notion that sports markets theoretically offer a 50% chance of winning or losing depending on the side, what is it that consistently draws sports bettors in and allows billion-dollar sportsbooks around the world to continue dominating the space? Popular strategies have emerged over time and bettors are constantly devising ways to profit off of a lucrative and expanding industry. Since sports betting markets aim to be efficient, do strategies exist that have the potential to capitalize on inefficiencies and maximize returns for market participants? The following provides a description of common strategies as well as their intentions relative to certain sporting events.

The uptick in sports betting has offered benefits for most parties involved. Major sportsbooks are seeing increased revenues, states are receiving additional tax revenue, sports leagues are experiencing an increase in viewership, and sports fans have the opportunity to place wagers on outcomes they believe to be likely. However, sports betting proves to be difficult even for those who believe they have all the answers. A recent study by the Sports Betting Report took a survey of 1,250 sports bettors to gain a sense of various metrics including how profitable they were, how much money they wager, and what their motives for betting were. The study found a few key results that aid in explaining why adults are drawn to bet on sporting events. First, it was concluded that 6 out of 10 daily sports bettors turn to gambling in order to source extra income. To gain a sense of how invested these bettors are, it was also revealed that 39% of daily sports bettors are usually wagering half or more of their monthly take-home pay. With this much at stake, it is certainly important for a sports bettor to have a structured approach to their wagering.

For this reason, a strategic approach to a series of sports bets may be advantageous for someone so heavily invested. Strategies in sports betting vary greatly and have the ability to offer greater returns based on a bettor's willingness to accept higher risks. Within this literature review, I'd like to discuss a few of these strategies with the intent of serving as a precursor for the analyses I plan to conduct which will test a range of strategies, and combinations of different strategies, against past and future results. For example, here are four different types of strategies which will be explored in depth, including the use of data analysis for the final three, throughout the thesis.

- Middling
- Trends
- The Martingale System

- Fading the Public

After reviewing those strategies, the remainder of the thesis will test the relative success of each, based on historic data and a live analysis of the “Fading the Public” strategy during the 2023 NCAA College Basketball Tournament.

Chapter 2

Literature Review

The following literature review attempts to provide the reader with a foundational knowledge of the sports betting industry, as well as information on specific betting strategies which will aid in understanding the thesis prompt overall. In order to research the efficiency of the market and deduce strategies that may enable sports bettors to profit, this review will help to gain further insight of the above topics and will ultimately allow for an efficient analysis of the research within this thesis.

Prior to discussing the lines, numbers, dollars, and cents of betting on sports, it's important to gain an understanding for how large this industry has become and how many people have delved into placing wagers on live sporting event outcomes. The effects of a growing sports betting industry not only have an impact on participants' wallets, but also has a ripple effect on sports teams and associations themselves. An increase in betting activity lends towards increased viewership of sporting events that may have otherwise been ignored by someone who is not a fan of the team. Research have examined the growth in the industry since. Diment (2022) compiles market information and statistics which tell the story of the global sports betting and lotteries industry over roughly the last decade. As of 2022, a market size of \$231.3B was comprised of revenue from 22,270 businesses in the space with profits of \$35.4B. Diment figures that 52.9% of this revenue is derived strictly from sports betting. The five years leading up to 2022 tell a tumultuous story for the industry. Though battered by Covid restrictions, the industry has experienced a large increase in revenue as a result of sporting events returning to action after the pandemic as well as the legalization of sports betting in many U.S. states. For reference, the

industry experienced a 21.6% decline from 2019 to 2020, while rebounding strongly, rising 33.8% to the current value and surpassing pre-pandemic figures in just two years.

In the U.S., this growth is attributed to the change in regulation relative to sports betting in recent years. Gramlich (2022) concluded that after the Supreme Court's 2018 ruling to legalize commercial sports betting in the United States, more U.S. adults have become comfortable with the concept and that 19% of U.S. adults have wagered on sports in one way or another in the 12 months leading up to September 2022. As of this time, 35 states and the District of Columbia have passed legislation allowing citizens to legally bet on sports contests. The decisions for states to move forward with the legalization process are largely driven by financial incentives. Norton (2020) described how after the pandemic began, state budgets were in grim shape, citing an estimated "\$615B fiscal hole in state budgets as a result of Covid-19 cumulatively over the next few fiscal years." As a result of this, state governments began to consider the potential effects of legalizing sports betting. Norton found that commercial casinos brought in more than \$10B in state and local gaming tax revenue in 2019, not including the additional sales and income tax that also came as a result of the casinos. Due to these factors, he hypothesized that states would become more receptive of the idea to legalize sports betting. At the time of his writing, just 18 states and the District of Columbia had legalized the activity. As mentioned above, as of September 2022, that figure has nearly doubled to 35 states as well as the District of Columbia, proving that states did seek budget help from the tax revenue associated with commercialized sports betting and that the Covid-19 pandemic has proved to be a major catalyst towards the availability of legal sports betting opportunities for U.S. citizens.

As far as the future outlook of the U.S. sports betting market is concerned, multiple researchers are fairly similar in their predictions. In a report by GrandView Research (2022),

they foresee a compound annual growth rate of 10.2% from 2022 to 2030, with reasoning relative to changes in regulation, penetration of connected devices, and the development in digital infrastructure. Transparency Market Research (2022) also predicts positive growth for the industry, determining that a 9.8% compound annual growth rate could be fueled by an increased usage of smartphones and the internet combined with the successful marketing tactics and risk-free promotions offered by some of the largest and most popular online sportsbooks.

For bettors, there is an abundance of online sportsbooks to choose from offering varying promotions and sign-up bonuses. In the U.S., Silverman (2022) details that FanDuel and DraftKings are of the most familiar sportsbooks, with Caesar's, Fox Bet, and BetMGM not far behind. FanDuel's parent company, Flutter Entertainment PLC, reported that as of June 2022, FanDuel controlled the most market share in the United States at an estimated 51%. Their CEO, Amy Howe, relayed that FanDuel was profitable in the second quarter of the 2022 fiscal year even as they made a considerable effort, as did their competitors, to acquire customers by spending generously on advertising, content acquisitions, and promotional betting lines as a result of new states passing legislation to allow sports betting. Evidently, bettors in legalized states have plenty of options for placing wagers and reaping the benefits of promotions offered by various sportsbooks.

Chapter 3

Research and Data Collection Methodology

I will primarily be utilizing past sporting event outcomes in order to pin them against strategies which I find interesting and worthy of future research. OddsShark, Action Network, VSiN, and Pointwise Sports are examples of sources that will be very advantageous towards my research as they provide archives of historical odds and results in all four major sports leagues and the NCAA. Excel will be extremely helpful when reviewing this data and will provide me the opportunity to portray my findings through spreadsheet analysis and other techniques for easy comprehension of the information presented.

Middling

Middling is an example of a simple strategy where one would attempt to take advantage of a moving spread or totals line by placing a bet on the side where you believe the line will shift, and then if the line does shift that way, you place an opposite bet on that line in hopes that the result ends up in the “middle” of the two bets. In his research regarding sports betting market efficiency, Loutsch (2020) declared middling to be a strategy that offers a chance at high returns with low risk. Here is an example of that occurrence. Let’s say the opening line total for an NFL game is set at 55.5 points. You infer that although the sportsbook deems that to be the fair line, it is a little high for the average bettor’s liking and may come down slightly once a majority of the handle is placed on the under. Therefore, you place a bet on the under and wait. If the line does not move, or goes up, then you have no prospect of middling and must hope your original bet of below 55.5 points wins. However, if you were correct in your assessment, and the line comes

down, now you have the opportunity to middle. Let's say the line comes down to 52.5 points, you could now bet on the over and have two bets on the total score of the game to either be over 52.5 points or under 55.5 points. In this situation, you technically would either break even, with one of the two bets winning, or win the "middle" bet if the total score is 53, 54, or 55. The only caveat here is that, as mentioned above, if you do not end up hitting the middle then you will lose the juice on your winning wager, usually about 10% of your winnings, which will leave you at a slight net loss. For some bettors however, this is a small price to pay for the opportunity to win big on a middle.

Trends

Trends enable sports bettors to place bets with higher confidence based on past statistics or certain variables. A trend can vary widely from a team simply winning a string of games to how well a quarterback plays in certain weather and much more. Finding variables that appear to have significant impact on a trend would be very advantageous for a sports bettor hoping to capitalize on those in the future. For example, Sports Betting Dime's Sascha Paruk (2022) compiled a report of betting trends relative to historical outcomes in the Sweet 16 and Elite 8 of the annual NCAA Men's College Basketball Tournament. Certain statistics such as the fact that #1 seeds are 18-1 in the last six years of Sweet Sixteen's, or that #12 seeds are 2-20 in the Sweet Sixteen all-time, or that in the past 10 tournaments a #7-11 seed team has made the Final Four in eight of those tournaments provide excellent information for use in future tournaments. These are just some of the trends that could be tested in the upcoming tournament to reveal whether or not past outcomes are any indication of future success in the sports betting market.

The Martingale System

The Martingale system is a very simple strategy yet requires significant capital. When utilizing this system, a bettor would start with a certain wager amount and double it for every consecutive bet that they lose, until they ultimately win. Pflaumer (2019) conducted an extensive study on the statistical analysis of the Roulette Martingale system. His assessment of the system's intention is that it provides participants with the ability to double their stake until they eventually win a profit equal to their original stake, however it is assumed that the casino would have no table limit and that the participant has unlimited capital. This presents an issue when considering the strategy in sports betting because not only do most bettors lack the significant capital to succeed with this strategy if they were to lose a significant number of bets, but sports bettors must also account for the "juice" associated with placing a wager which makes the math for the roulette strategy incomparable to a sports betting strategy. However, it is interesting to consider the fact that in a roulette or casino game, the chance of winning or losing is strictly that – by chance. In sports, one could assume that a 50/50 shot at winning or losing a bet can actually be swayed by personal knowledge and past outcomes. For example, let's say a sports bettor were to use the Martingale system to bet on a single NFL team against the spread for all 17 of their regular season contests. If they possess the capital required for a worse-case scenario where the team doesn't cover a spread until week 17 or are comfortable enough with the slight chance that the team finishes 0-17 against the spread, then history would show that using this system in this scenario has a high likelihood of proving profitable for the sports bettor. This is due to the fact that since 2003, when TeamRankings.com began tracking this statistic, no NFL team has finished a season winless against the spread. In fact, it hasn't been fairly close, as the worst record in the 19-year span was 3-13. This is just a specific example of the strategies that I hope

to cover throughout my research and ultimately will conclude with a compilation of useful knowledge for sports bettors and those interested in the intricacies of the industry.

Fading the Public

The term “fading the public” is common in sports betting, referring to wagering against the side which is fielding the larger percentage of bets. This strategy can be favorable because some bettors believe that “Vegas”, or the sportsbooks, have the best insight on the potential outcome of a sporting event and therefore would rather side with Vegas since a large allotment of public money on one side means a larger payout for the books if the other side wins. Sometimes, when one side of a bet is receiving a large amount of action, sportsbooks adjust the game line in order to field more bets on the other side and ultimately lower their exposure to a potential loss. For example, if a college basketball game between the Syracuse Orange and the Georgetown Hoyas has a line set at -5.5 in favor of the Orange, and 65% of the handle is on Syracuse while 35% of the handle is on Georgetown, then the sportsbooks may decide to move the line up to -6.5 in order to attract more wagers on Georgetown and lessen the gap in handle on either side. In a perfect scenario, because of the “juice” that the sportsbooks take automatically from each wager, if a book can have 50% action on one side and 50% action on the other, they guarantee themselves a profit.

However, sportsbooks don’t always position lines in order to create this perfect scenario. This leaves bettors wondering if Vegas has an edge on predicting game outcomes based on relevant insight. In this case, the “fade the public” strategy can be taken one step further by identifying “line freezes”. For example, when a sportsbook is fielding lots of action on one side

and abstains from moving the line in order to even out their exposure, this is known as a “line freeze”. In this case, sharp bettors think that Vegas has an inclination about how the contest will unfold and therefore is not worried about having a majority of the action on the side that they think will lose. An example of this scenario would be the same situation as above, yet the sportsbooks decide not to adjust the line and are comfortable with having lots of action on one side.

Now, betting sharps may raise an eyebrow as to why the sportsbooks are choosing to abstain from altering the spread and may hypothesize whether or not there is a reason for this. This “line freeze” would cause a bettor utilizing the “fade the public” strategy to have confidence in placing a bet on Georgetown +5.5. This is a rare occurrence, and it is unknown whether this is done purposefully by sportsbooks, so it would be difficult to collect data on these happenings unless one was to track line freezes and outcomes over a long period of time. However, the “fade the public” strategy can be easily analyzed. In order to test its potential with recent and relevant data, I decided to track public betting percentages ahead of the first round of the 2023 NCAA College Basketball Tournament. My results and evaluation of the profitability for a bettor engaging in this strategy during the annual basketball tournament are included in the following chapter.

Chapter 4

Strategy Analysis and Statistical Results

Capitalizing on Trends

The first strategy I chose to analyze involves trend betting, specifically on NFL teams that compete in games where they are predicted to lose by double digit points. In this scenario, that team is considered the underdog, and +10 or more against the spread. I was interested in this phenomenon because a common trend in the NFL is that heavy underdogs usually buck public sentiment and perform better than expected, even though they are supposedly a far weaker team than their opponent. Though one may be apprehensive to place a bet on a significant underdog, past historical results may implicate a great opportunity for sports bettors to make a profit by backing the pups.

In order to test this theory, I compiled data for all 32 NFL teams and their records against the spread while being 10+ point underdogs. Certainly, some teams have a larger sample size to draw from than others, but I inputted specific parameters that would allow for analyzation of data that was drawn from all 32 teams. In order to do this, I tracked each team's record against the spread in their last 30 games in each of these three categories.

- Regular season games as a 10+ point underdog
- Regular season HOME games as a 10+ point underdog
- Regular season ROAD games as a 10+ point underdog

The goal of this data collection is to see if any of these categories show a profitable outcome, and then if so, determining if betting those categories in the 2022-23 NFL season would have continued the trend and led to a profitable strategy.

Before revealing the results of the data collection, it's important to describe what the term profitable means in the context of sports betting. According to Actionnetwork.com, due to the fact that most wagers are not 1 to 1 odds, that is instead of a bet being +100 which would pay \$100 for every \$100 wagered, most wagers are around -110 in order for the "house", or sportsbook, to collect their fee for hosting your bet. Therefore, in this scenario, a \$100 bet would payout \$90.91. This "fee" is often referred to in the sports betting world as the "juice".

Therefore, Action Network estimates that in order to be profitable, a bettor must win at least 52.4% of their bets. Judging by this, Action declares that for most participants 55% would be a good year, 60% a great year, and 65% a career year. Knowing how successful a strategy must fare to be deemed profitable, good, great, or career in the eyes of many, let's determine how the strategy above has performed.

First, I looked at each NFL team's record against the spread in regular season games as underdogs of 10 points or more and decided to look at the teams past 30 games within these parameters. Though some teams didn't have 30 games in their history where they were 10+ point underdogs, I still collected information across the number of games in which they did. The results of this data were as follows.

| Team | Record ATS in regular season games as 10pt+ underdog | | |
|-----------------------|--|------|--------|
| | WIN | LOSS | PUSH |
| Arizona Cardinals | 14 | 14 | 2 |
| Atlanta Falcons | 17 | 12 | 1 |
| Baltimore Ravens | 16 | 8 | 1 |
| Buffalo Bills | 15 | 14 | 1 |
| Carolina Panthers | 17 | 13 | 0 |
| Chicago Bears | 15 | 14 | 1 |
| Cincinnati Bengals | 15 | 15 | 0 |
| Cleveland Browns | 14 | 16 | 0 |
| Dallas Cowboys | 14 | 10 | 0 |
| Denver Broncos | 8 | 5 | 1 |
| Detroit Lions | 14 | 14 | 2 |
| Green Bay Packers | 15 | 6 | 1 |
| Houston Texans | 16 | 14 | 0 |
| Indianapolis Colts | 17 | 13 | 0 |
| Jacksonville Jaguars | 15 | 14 | 1 |
| Kansas City Chiefs | 21 | 9 | 0 |
| Las Vegas Raiders | 18 | 12 | 0 |
| Los Angeles Chargers | 12 | 13 | 1 |
| Los Angeles Rams | 15 | 15 | 0 |
| Miami Dolphins | 17 | 12 | 1 |
| Minnesota Vikings | 10 | 10 | 1 |
| New England Patriots | 11 | 10 | 1 |
| New Orleans Saints | 12 | 10 | 0 |
| New York Giants | 18 | 12 | 0 |
| New York Jets | 14 | 15 | 1 |
| Philadelphia Eagles | 15 | 7 | 0 |
| Pittsburgh Steelers | 7 | 7 | 0 |
| San Francisco 49ers | 14 | 16 | 0 |
| Seattle Seahawks | 9 | 17 | 0 |
| Tampa Bay Buccaneers | 18 | 12 | 0 |
| Tennessee Titans | 16 | 14 | 0 |
| Washington Commanders | 15 | 12 | 3 |
| TOTAL | 464 | 385 | 19 |
| Winning percentage | | | 54.65% |

Figure 1 - NFL Team Records in their Last 30 or Less Games as a 10+ Point Underdog

The league record was 464-385-19, resulting in a 54.65% winning percentage. This represents a profitable outcome, so I decided to take the data one step further by implementing the parameters for home and away games to determine whether or not there was stronger potential for profitability in either setting. First, starting with home game data it was found that all NFL teams' games as 10+ point home underdog resulted in a record of 122-92-3 all time. This is a smaller sample size since it is rare for a home team to have such a large spread, but still boasts a winning percentage of 57.01%.

| Team | Record ATS in regular season games as 10pt+ HOME underdog | | |
|-----------------------|---|-----------|----------|
| | WIN | LOSS | PUSH |
| Arizona Cardinals | 7 | 1 | 0 |
| Atlanta Falcons | 6 | 6 | 0 |
| Baltimore Ravens | 2 | 1 | 1 |
| Buffalo Bills | 3 | 3 | 0 |
| Carolina Panthers | 6 | 4 | 0 |
| Chicago Bears | 1 | 0 | 0 |
| Cincinnati Bengals | 7 | 4 | 1 |
| Cleveland Browns | 7 | 9 | 0 |
| Dallas Cowboys | 1 | 2 | 0 |
| Denver Broncos | 2 | 1 | 0 |
| Detroit Lions | 9 | 6 | 0 |
| Green Bay Packers | 4 | 1 | 0 |
| Houston Texans | 6 | 4 | 0 |
| Indianapolis Colts | 7 | 5 | 0 |
| Jacksonville Jaguars | 6 | 1 | 0 |
| Kansas City Chiefs | 6 | 0 | 0 |
| Las Vegas Raiders | 7 | 5 | 0 |
| Los Angeles Chargers | 0 | 1 | 0 |
| Los Angeles Rams | 5 | 7 | 0 |
| Miami Dolphins | 4 | 3 | 0 |
| Minnesota Vikings | 2 | 1 | 0 |
| New England Patriots | 5 | 2 | 0 |
| New Orleans Saints | 0 | 3 | 0 |
| New York Giants | 6 | 2 | 0 |
| New York Jets | 3 | 2 | 0 |
| Philadelphia Eagles | 1 | 1 | 0 |
| Pittsburgh Steelers | 0 | 0 | 0 |
| San Francisco 49ers | 3 | 5 | 0 |
| Seattle Seahawks | 1 | 2 | 0 |
| Tampa Bay Buccaneers | 1 | 4 | 0 |
| Tennessee Titans | 1 | 3 | 0 |
| Washington Commanders | 3 | 3 | 1 |
| TOTAL | 122 | 92 | 3 |
| Winning percentage | | | 57.01% |

Figure 2 - NFL Team Records in their Last 30 or Less Games as a 10+ Point Home Underdog

A successful strategy that would place a bettor right in between a good and great year by public standards. Next, I ran the data against the same parameters yet analyzing away games rather than home. This data worked out to a record of 416-378-18.

| Team | Record ATS in regular season games as 10pt+ ROAD underdog | | |
|---------------------------|---|------------|---------------|
| | WIN | LOSS | PUSH |
| Arizona Cardinals | 14 | 14 | 2 |
| Atlanta Falcons | 16 | 13 | 1 |
| Baltimore Ravens | 14 | 7 | 0 |
| Buffalo Bills | 13 | 16 | 1 |
| Carolina Panthers | 15 | 10 | 0 |
| Chicago Bears | 14 | 15 | 1 |
| Cincinnati Bengals | 14 | 16 | 0 |
| Cleveland Browns | 13 | 17 | 0 |
| Dallas Cowboys | 13 | 8 | 0 |
| Denver Broncos | 6 | 4 | 1 |
| Detroit Lions | 17 | 11 | 2 |
| Green Bay Packers | 11 | 5 | 1 |
| Houston Texans | 15 | 14 | 0 |
| Indianapolis Colts | 15 | 15 | 0 |
| Jacksonville Jaguars | 13 | 16 | 1 |
| Kansas City Chiefs | 16 | 11 | 0 |
| Las Vegas Raiders | 17 | 13 | 0 |
| Los Angeles Chargers | 12 | 12 | 1 |
| Los Angeles Rams | 12 | 18 | 0 |
| Miami Dolphins | 17 | 10 | 1 |
| Minnesota Vikings | 8 | 9 | 1 |
| New England Patriots | 6 | 8 | 1 |
| New Orleans Saints | 12 | 7 | 0 |
| New York Giants | 13 | 11 | 0 |
| New York Jets | 13 | 16 | 1 |
| Philadelphia Eagles | 14 | 6 | 0 |
| Pittsburgh Steelers | 7 | 7 | 0 |
| San Francisco 49ers | 13 | 17 | 0 |
| Seattle Seahawks | 8 | 15 | 0 |
| Tampa Bay Buccaneers | 18 | 12 | 0 |
| Tennessee Titans | 15 | 14 | 1 |
| Washington Commanders | 12 | 11 | 2 |
| TOTAL | 416 | 378 | 18 |
| Winning percentage | | | 52.39% |

Figure 3 - NFL Team Records in their Last 30 or Less Games as a 10+ Point Road Underdog

Though more wins than losses, this strategy works out to a winning percentage of 52.39% which would place a bettor right on the verge of profitability and most likely even on their wagers.

Considering all of these outcomes, I was curious to see how a bettor would fare utilizing this strategy for applicable games during the 2022-23 season. Would historical outcomes hold up in today's NFL or have sportsbooks become increasingly smarter and closed the door on this favorable strategy.

As it turns out, in this scenario, past outcomes were an indication of future results. A \$100 bettor would have gone 18-11 betting on 10+ point underdogs at home or on the road during the regular season, winning 62.07% of the time for a profit of \$536.38.

| | | | |
|------------------------------|----|----|--------|
| 2022-23 Statistics All Teams | 18 | 11 | 0 |
| Winning percentage | | | 62.07% |

Figure 4 - Record Among All NFL Teams that were 10+ Point Underdogs During the 2022-23 NFL Season

Choosing to wager on road games alone, bettors would have posted a 13-10 record, with their 56.52% winning percentage earning them a profit of \$181.83.

| | | | |
|------------------------------|----|----|--------|
| 2022-23 Statistics All Teams | 13 | 10 | 0 |
| Winning percentage | | | 56.52% |

Figure 5 - Record Among All NFL Teams that were 10+ Point Road Underdogs During the 2022-23 NFL Season

Lastly, if a bettor were to analyze the historical stats and place their 2022-23 season wagers on the bet with the greatest winning percentage, 10+ point home underdogs, they would have gone 5-1 this past season for an 83.33% winning percentage and a profit of \$354.55.

| | | | |
|------------------------------|---|---|--------|
| 2022-23 Statistics All Teams | 5 | 1 | 0 |
| Winning percentage | | | 83.33% |

Figure 6 - Record Among All NFL Teams that were 10+ Point Home Underdogs During the 2022-23 NFL Season

Seeking a Profitable Use for the Martingale System

Next, the Martingale system is a gambling strategy where a participant would theoretically place a bet on a contest and double their wager after every loss until they win and eventually make a profit equal to their original wager. Although this seems cut and dry, the strategy is very risky as a string of losses can amount to a massive deficit. For example, if a \$100 bettor were to engage in this strategy on college basketball spreads at even money odds of +100 (though the “juice” can be accounted for mathematically with higher wagers, we will consider even odds for the sake of clear discussion) if they were to lose their first wager but double their next wager and win, they would have won \$200 on a \$200 bet and net \$100 in profit (\$200 profit minus original \$100 wager lost). Though at first it may appear that this strategy offers guaranteed winnings by eventually winning a bet, both a lack of sufficient capital and the gambler’s fallacy are arguments against the Martingale system. Although it may seem harmless at first to wager \$100, then \$200, then \$400, after losing nine bets in a row for example, one would have to put up \$51,200 on the 10th bet in order to recoup their previous nine bets worth \$51,100.

Additionally, the gambler's fallacy states that the probability of a string of outcomes is different than the probability of each outcome itself. As for our situation above, although it may seem highly unlikely that one could lose let's say 10 bets in a row, past indications have no bearing on future results and each future outcome is still a 50/50 chance regardless of whether you've lost a significant number of bets in a row. However, this fallacy relates to outcomes that have calculated odds such as a 50/50-coin flip, but are there avenues in sports betting that may prove this strategy successful with an ample amount of capital?

After considering what outcomes in sports may actually have relation to past results, I reviewed NFL teams' records throughout the season against the spread. Though teams have gone winless in certain seasons in the past, I assumed that it'd be very unlikely for a team to fail to cover the spread for an entire season. As it turns out, according to ESPN, an NFL team has never gone winless against the spread in the entire history of the league. In fact, the worst season record against the spread all time was held by the Tampa Bay Buccaneers in 1976 who still managed to cover two games, finishing 2-10-2 on the year for a .167-win percentage. Knowing these statistics, I decided to run an analysis of how the Martingale system would have fared for the 2022-23 NFL system assuming a \$100 unit per bet, even money odds, and an unlimited capital source. All outcomes against the spread have been sourced from Pointwise Sports, an information service that has been providing forecasts of college and professional football and basketball games for 54 years. That information is included below.

NFL SCHEDULES

| | | | | | | | | | | | |
|------------------------------|-------------|--------|-------------------------------|-------------|--------|-----------------------------|-------------|--------|-----------------------------------|-------------|--------|
| ARIZONA (NT) (4-13) | | | CAROLINA (NT) (7-10) | | | DALLAS (AT) (13-6) | | | HOUSTON (NT) (3-13-1) | | |
| A. 12# Cincinnati | + 1% 36-23 | W 31 O | A. 13# Washington | + 2% 23-21 | W 36 O | A. 13# Denver | + 4% 7-17 | L 33 U | A. 13# NW ORLEANS | - 1% 17-13 | W 36 U |
| 21# BALTIMORE | + 5% 17-24 | L 37 O | 20# New England | + 6% 10-20 | L 37 U | 20# LA Chargers | + 5 32-18 | W 37 O | 19# LA Rams | - 2% 24-20 | W 38 O |
| 27# Tennessee | + 3% 23-26 | W 35 O | 27# BUFFALO | - 5% 21-0 | W 41 U | 26# SEATTLE | + 6% 27-26 | W 35 O | 25# SAN FRAN | + 2% 17-0 | W 40 U |
| S. 11 KANSAS CITY | + 6 21-44 | L 54 O | S. 11 CLEVELAND | - 1% 24-26 | L 42 O | S. 11 TAMPA BAY | + 2% 3-19 | L 49 U | S. 11 INDAPOLIS-OT | + 7 20-20 | W 46 U |
| 18 Las Vegas | + 5% 29-23 | W 52 T | 18 NY Giants | - 1 16-19 | L 43 U | 18 CINCINNATI | + 7 20-17 | W 42 U | 18 Denver | + 10 9-16 | L 45 U |
| 25 LA RAMS | + 3% 12-20 | L 48 U | 25 NW ORLEANS | + 2 22-14 | W 41 U | 26 NY Giants | + 1 23-16 | W 38 O | 25 Chicago | + 3 20-23 | T 40 O |
| O. 2 Carolina | + 1 26-16 | W 44 U | O. 2 ARIZONA | - 1 16-26 | L 44 U | O. 2 WASHINGTON | - 3 25-10 | W 41 U | O. 2 LA CHARGERS | + 5% 24-34 | L 46 O |
| 9 PHILAPHIA | + 5% 17-20 | W 48 U | 9 SAN FRAN | + 6 15-37 | L 40 O | 9 LA Rams | + 5 22-10 | W 41 U | 9 Jacksonville | + 7 13-6 | W 43 U |
| 16 Seattle | - 2% 9-19 | L 50 U | 16 LA Rams | + 10 10-24 | L 41 U | 16 Philadelphia | + 7 17-26 | L 42 O | 16 Bye | | |
| 20 NW ORLEANS | - 2% 42-34 | W 44 O | 23 TAMPA BAY | + 13 21-3 | W 38 U | 23 DETROIT | - 7 24-6 | W 49 U | 23 Las Vegas | + 7 20-38 | L 46 O |
| 30 Minnesota | + 3% 26-34 | L 49 O | 30 Atlanta-OT | + 4% 34-37 | W 42 O | 30 CHICAGO | - 9% 49-29 | W 43 O | 30 TENNESSEE | + 1% 10-17 | L 39 U |
| N. 6 SEATTLE | - 2 21-31 | L 49 O | N. 6 Cincinnati | + 7 21-42 | L 42 O | N. 6 Bye | | | N. 3 PHILAPHIA | + 14 17-29 | W 45 O |
| 13 LA Rams | + 3% 27-17 | W 38 O | 10 ATLANTA | + 2% 25-15 | W 41 U | 13 Green Bay-OT | - 3% 28-31 | L 45 O | 13 NY Giants | + 5 16-24 | L 41 U |
| 21 San Francisco | + 9% 10-38 | L 43 O | 20 Baltimore | + 12% 3-13 | W 41 U | 20 Minnesota | - 2 40-3 | W 48 U | 20 WASHINGTON | + 3 10-23 | L 41 U |
| 27 LA CHARGERS | + 2% 24-25 | W 48 O | 27 DENVER | Pick 23-10 | W 36 U | 24 NY GIANTS | - 10 28-20 | L 46 O | 27 Miami | + 14 15-30 | L 47 U |
| D. 4 Bye | | | D. 4 Bye | | | D. 4 INDAPOLIS | - 11 54-19 | W 45 O | D. 4 CLEVELAND | + 7% 14-27 | L 46 U |
| 12 NW ENGLAND | + 2 13-27 | L 44 U | 11 Seattle | + 4 30-24 | W 45 O | 11 HOUSTON | - 17 27-23 | L 45 O | 11 Dallas | + 17 23-27 | W 45 O |
| 18 Denver | + 2 15-24 | L 47 U | 18 PITTSBURGH | + 3 16-24 | L 37 O | 18 Jacksonville-OT | - 4 34-40 | L 48 O | 18 KANS CITY-OT | + 14 24-30 | W 49 O |
| 25 TAMPA BAY-OT | + 7% 16-19 | W 41 U | 24 DETROIT | + 2 37-23 | W 44 O | 24 PHILAPHIA | - 4 40-34 | W 48 O | 24 Tennessee | + 3 19-14 | W 34 U |
| J. 1 Atlanta | + 6% 19-20 | W 40 U | J. 1 Tampa Bay | + 3% 24-30 | L 41 O | 29 Tennessee | - 13% 27-13 | W 41 U | J. 1 JVILLE | + 3% 3-31 | L 44 U |
| 8 San Francisco | + 14% 13-38 | L 40 O | 8 New Orleans | + 3% 10-7 | W 41 U | J. 8 Washington | - 7% 6-26 | L 41 U | 8 Indianapolis | + 3 32-31 | W 38 O |
| ATLANTA (AT) (7-10) | | | CHICAGO (NT) (3-14) | | | DENVER (NT) (5-12) | | | INDIANAPOLIS (AT) (4-12-1) | | |
| A. 12# Detroit | + 2% 27-23 | W 36 O | A. 13# KANSAS CITY | + 1% 19-14 | W 38 U | A. 13# DALLAS | - 4% 17-7 | W 33 U | A. 13# Buffalo | - 1% 24-27 | L 38 O |
| 22# NY Jets | - 4% 22-25 | L 37 O | 18# Seattle | + 4 27-11 | W 39 U | 20# Buffalo | + 7 15-42 | L 42 O | 20# DETROIT | + 1% 26-27 | W 38 O |
| 27# JVILLE | - 7% 28-12 | W 35 O | 27# Cleveland | + 3% 21-20 | W 39 O | 27# SAN FRAN | - 2% 23-13 | W 35 O | 27# TAMPA BAY | - 3% 27-10 | W 41 U |
| S. 11 NW ORLEANS | + 5% 26-27 | W 44 O | S. 11 SAN FRAN | + 6% 19-10 | W 38 U | S. 12 Seattle | - 6 16-17 | L 43 U | S. 11 Houston-OT | - 7 20-20 | L 46 U |
| 18 LA Rams | + 10 27-31 | W 46 O | 18 Green Bay | + 10% 10-27 | L 42 U | 18 HOUSTON | - 10 16-9 | L 45 U | 18 Jacksonville | - 3 0-24 | L 43 U |
| 25 Seattle | + 1 27-23 | W 44 U | 25 HOUSTON | - 3 23-20 | T 40 U | O. 2 Las Vegas | + 2% 23-32 | L 46 O | 25 KANSAS CITY | + 4% 20-17 | W 51 U |
| O. 2 CLEVELAND | + 1 23-20 | W 48 U | O. 2 NY Giants | + 3 12-20 | L 39 U | 6 INDAPOLIS-OT | - 3 9-12 | L 42 U | O. 2 TENNESSEE | - 4 17-24 | L 43 U |
| 9 Tampa Bay | + 10 15-21 | W 46 U | 9 Minnesota | + 8% 22-29 | W 44 O | 17 LA Chargers | + 4 16-19 | W 45 U | 6 Denver-OT | + 3 12-9 | W 42 U |
| 16 SAN FRAN | + 3% 28-14 | W 45 U | 13 WASHINGTON | + 1 7-12 | L 39 U | 25 SAN FRAN | + 1% 11-10 | W 45 U | 16 JVILLE | - 1% 34-27 | W 41 O |
| 23 Cincinnati | + 6% 17-35 | L 48 O | 24 New England | + 8% 33-14 | W 40 O | O. 2 Las Vegas | + 2% 23-32 | L 46 O | 23 Tennessee | + 2% 10-19 | L 43 U |
| 30 CAROLINA-OT | - 4% 37-34 | L 42 O | 30 Dallas | + 9% 29-49 | L 43 O | 6 INDAPOLIS-OT | - 3 9-12 | L 42 U | 30 WASHINGTON | - 2% 16-17 | L 39 U |
| N. 6 LA CHARGERS | + 2% 17-20 | L 45 U | N. 6 MIAMI | + 4 32-35 | W 46 O | 17 LA Chargers | + 4 16-19 | W 45 U | N. 6 New England | + 5 3-26 | L 40 U |
| 10 Carolina | - 2% 15-25 | L 41 U | 13 DETROIT | - 3 30-31 | L 49 O | 20 NY JETS | + 2 9-16 | L 36 U | 13 Las Vegas | + 4 25-20 | W 42 O |
| 20 CHICAGO | - 2 27-24 | W 49 O | 20 Atlanta | + 2 24-27 | L 49 O | 30 Jacksonville-N | + 1% 21-17 | W 40 U | 20 PHILAPHIA | + 6% 16-17 | W 45 U |
| 27 Washington | + 3% 13-19 | L 40 U | 27 NY Jets | + 7% 10-31 | L 47 O | N. 6 Bye | | | 28 PITTSBURGH | - 2% 17-24 | L 40 O |
| D. 4 PITTSBURGH | + 1% 16-19 | L 42 U | D. 4 GREEN BAY | + 3% 19-28 | L 45 O | 13 Tennessee | + 2% 10-17 | L 39 U | D. 4 Dallas | + 11 19-54 | L 45 O |
| 11 Bye | | | 11 Bye | | | 20 LAS VEGAS-OT | - 2% 16-22 | L 41 U | 11 Bye | | |
| 18 New Orleans | + 5 18-21 | W 43 U | 18 PHILAPHIA | + 8% 20-25 | W 47 U | 27 Carolina | Pick 10-23 | L 36 U | 18 Minnesota-OT | + 3% 36-39 | W 47 O |
| 24 Baltimore | + 6% 9-17 | L 35 U | 24 BUFFALO | + 8 13-35 | L 41 U | D. 4 Baltimore | + 8% 9-10 | W 40 U | 26 LA CHARGERS | + 3% 3-20 | L 44 U |
| J. 1 ARIZONA | - 6% 20-19 | L 40 U | J. 1 Detroit | + 4 10-41 | L 52 U | 11 KANSAS CITY | + 9 28-34 | W 44 O | J. 1 NY Giants | + 5% 10-38 | L 39 O |
| 8 TAMPA BAY | - 6 30-17 | W 40 U | 8 MINNESOTA | + 6% 13-29 | L 43 U | 18 ARIZONA | - 2 24-15 | W 37 O | 8 HOUSTON | - 3 31-32 | L 38 O |
| BALTIMORE (AT) (10-8) | | | CINCINNATI (AT) (14-4) | | | DETROIT (AT) (9-8) | | | JACKSONVILLE (NT) (10-9) | | |
| A. 11# TENNESSEE | - 3% 23-10 | W 34 U | A. 12# ARIZONA | - 1% 23-36 | L 31 O | A. 12# ATLANTA | - 2% 23-27 | L 36 O | A. 4# Las Vegas-N | + 2% 11-27 | L 31 O |
| 21# Arizona | - 5% 24-17 | W 37 O | 21# NY Giants | + 4% 22-25 | W 37 O | 20# Indianapolis | - 1% 27-26 | L 38 O | 12# CLEVELAND | - 2% 13-24 | L 36 O |
| 27# WASHINGTON | - 6% 17-15 | L 38 U | 27# LA RAMS | - 2% 16-7 | W 36 U | 28# Pittsburgh | + 6% 9-19 | L 40 U | 20# PITTSBURGH | - 1% 15-16 | L 41 U |
| S. 11 NY Jets | - 6% 24-9 | W 44 U | S. 11 PIT-OT | - 7 20-23 | L 44 U | S. 11 PHILAPHIA | + 6 35-38 | W 49 O | 27# Atlanta | + 7% 12-28 | L 35 O |
| 18 MIAMI | - 3% 38-42 | L 44 O | 18 Dallas | - 7 17-20 | L 42 U | 18 WASHINGTON | Pick 36-27 | W 48 O | S. 11 Washington | + 3 22-28 | L 43 O |
| 25 New England | - 2% 37-26 | W 45 O | 25 NY Jets | - 6% 27-12 | W 46 U | 25 Minnesota | + 6% 24-28 | W 52 T | 18 INDAPOLIS | + 3 24-0 | W 43 U |
| O. 2 BUFFALO | + 3 20-23 | T 50 U | 29 MIAMI | - 4 27-15 | W 49 U | O. 2 SEATTLE | - 3% 45-48 | L 49 O | 25 LA Chargers | + 3 38-10 | W 42 O |
| 9 CINCINNATI | + 3 19-17 | L 47 U | O. 9 Baltimore | + 3 17-19 | W 47 U | 9 New England | + 3 0-29 | L 47 U | O. 2 Philadelphia | + 6% 21-19 | L 44 O |
| 16 NY Giants | - 5% 20-24 | L 45 U | 16 New Orleans | - 3 30-26 | W 43 O | N. 6 Bye | | | 9 HOUSTON | - 7 6-13 | L 43 U |
| 23 CLEVELAND | - 6% 23-20 | L 46 U | 23 ATLANTA | - 6% 35-17 | W 48 O | 23 Dallas | + 7 6-24 | L 49 U | 16 Indianapolis | + 1% 27-34 | L 41 O |
| 27 Tampa Bay | + 2% 27-22 | W 47 O | 31 Cleveland | - 3 13-32 | L 45 T | 30 MIAMI | + 4 27-31 | T 53 O | 23 NY Giants | - 3 17-23 | L 44 U |
| N. 7 New Orleans | - 1% 27-13 | W 56 U | N. 6 CAROLINA | - 7 42-21 | W 43 O | N. 6 GREEN BAY | + 4 15-9 | W 49 U | 30 Denver-N | - 1% 17-21 | L 40 U |
| 13 Bye | | | 13 Bye | | | 13 Chicago | + 3 31-30 | W 49 O | N. 6 LAS VEGAS | + 2% 27-20 | W 48 U |
| 20 CAROLINA | - 12% 13-3 | L 41 L | 20 Pittsburgh | - 3% 37-30 | W 40 O | 20 NY Giants | + 3 31-18 | W 45 O | 13 Kansas City | + 9% 17-27 | L 51 U |
| 27 Jacksonville | - 3 27-28 | L 43 O | 27 Tennessee | Pick 20-16 | W 42 U | 24 BUFFALO | + 9% 25-28 | W 55 U | 20 Bye | | |
| D. 4 DENVER | - 8% 10-9 | L 40 U | D. 4 KANSAS CITY | + 2% 27-24 | W 53 U | D. 4 JVILLE | - 1 40-14 | W 51 O | 27 BALTIMORE | + 3 28-27 | W 43 O |
| 11 Pittsburgh | + 2 16-14 | W 36 U | 11 CLEVELAND | - 4% 23-10 | W 47 U | 11 MINNESOTA | - 2 34-23 | W 52 O | D. 4 Detroit | + 1 14-40 | L 51 O |
| 18 Cleveland | + 3 3-13 | L 39 U | 18 Tampa Bay | - 3 34-23 | W 48 O | 18 NY Jets | + 2 20-17 | W 43 U | 11 Tennessee | + 3% 36-22 | W 42 O |
| 24 ATLANTA | - 6% 17-9 | W 35 U | 24 New England | - 3 22-18 | W 41 U | 24 Carolina | - 2 23-37 | L 44 O | 18 DALLAS-OT | + 4 40-34 | W 48 O |
| J. 1 PITTSBURGH | - 1 13-16 | L 35 U | J. 2 BUFFALO | CANCELLED | | J. 1 CHICAGO | - 4 41-10 | W 52 U | 22 NY Jets | + 2% 19-3 | W 36 U |
| 8 Cincinnati | + 11% 16-27 | W 39 O | 8 BALTIMORE | - 11% 27-16 | L 39 O | 8 Green Bay | + 4 20-16 | W 48 U | J. 1 Houston | - 3% 31-3 | W 44 U |
| 15x Cincinnati | + 8 17-24 | W 40 O | 15x BALTIMORE | - 8 24-17 | L 40 O | | | | 8 TENNESSEE | - 6 20-16 | L 40 U |
| BUFFALO (AT) (14-4) | | | 22x Buffalo | + 6 27-10 | W 48 U | | | | 14x LA CHARGERS | + 2 31-30 | W 47 O |
| A. 13# INDAPOLIS | + 1% 27-24 | W 38 O | 29x Kansas City | | | | | | 21x Kansas City | + 9% 20-27 | W 52 U |
| 20# DENVER | - 7 42-15 | W 42 O | CLEVELAND (NT) (7-10) | | | GREEN BAY (NT) (8-9) | | | KANSAS CITY (NT) (15-3) | | |
| 27# Carolina | + 5% 0-20 | L 41 U | A. 12# Jacksonville | + 2% 24-13 | W 36 O | A. 12# San Francisco | + 3% 21-28 | L 36 O | A. 13# Chicago | - 1% 14-19 | L 38 U |
| S. 8 LA Rams | - 2 31-10 | W 52 U | 21# PHILAPHIA | + 1% 20-21 | W 35 O | 19# NW ORLEANS | - 3% 20-10 | W 37 U | 20# WASHINGTON | - 5 24-14 | W 43 U |
| 19# TENNESSEE | - 10 41-7 | W 47 O | 27# CHICAGO | - 3% 20-21 | L 39 O | 27# Kansas City | - 3% 10-17 | L 37 U | 25# GREEN BAY | + 3% 17-10 | W 37 U |
| 25 Miami | - 4 19-21 | L 54 U | S. 11 Carolina | + 1% 26-24 | W 42 O | S. 11 Minnesota | + 2 7-23 | L 46 U | S. 11 Arizona | - 6 44-21 | W 54 U |
| O. 2 Baltimore | - 3 23-20 | T 50 U | 18 NY JETS | - 6 30-31 | L 39 O | 18 CHICAGO | - 10% 27-10 | W 42 U | 15 LA CHARGERS | - 4 27-24 | L 52 U |
| 9 PITTSBURGH | - 14 38-3 | W 44 U | 22 PITTSBURGH | - 4% 29-17 | W 38 O | 25 Tampa Bay | + 1% 14-12 | W 42 U | 25 Indianapolis | - 4% 17-20 | L 51 U |
| 16 Kansas City | - 2% 24-20 | W 54 U | O. 2 Atlanta | - 1 20-23 | L 48 U | O. 2 NW ENG-OT | - 9% 27-24 | L 40 O | O. 2 Tampa Bay | + 2 41-31 | W 48 O |
| N. 30 GREEN BAY | - 10% 27-17 | L 47 U | 9 LA CHARGERS | + 2 28-30 | T 47 O | 16 NY Giants-N | - 9 22-29 | L 42 O | 10 LAS VEGAS | - 7 30-29 | L 52 O |
| 6 NY Jets | - 10% 17-20 | L 46 U | 16 NW ENGLAND | - 2% 15-38 | L 47 U | 23 Washington | - 4 21-23 | L 42 O | 16 BUFFALO | + 2% 20-24 | L 54 U |
| 13 MINN-OT | - 6% 30-33 | L 47 O | 23 Baltimore | + 6% 20-23 | W 46 U | 30 Buffalo | + 10% 17-27 | W 47 U | 23 San Francisco | - 1 44-23 | W 49 O |
| 20 CLEVELAND | - 7% 31-23 | W 50 O | 31 CINCINNATI | + 3 32-13 | W 45 T | N. 6 Detroit | - 4 9-15 | L 49 U | 30 Bye | | |
| D. 1 New England | - 4 24-10 | W 43 U | N. 6 Bye | | | 13 DALLAS-OT | + 3% 31-28 | W 45 O | N. 6 TENNESSEE | - 14 20-17 | L 45 U |
| 11 NY JETS | - 10 20-12 | L 43 U | 20 Buffalo | + 7% 23-31 | L 50 O | 17 TENNESSEE | - 3 17-27 | L 41 O | 13 JVILLE | - 9% 27-17 | W 51 U |
| 18 MIAMI | - 7 32-29 | L 45 O | 27 TAMPA BAY-OT | + 3 23-17 | L 42 U | D. 4 Philadelphia | + 6% 33-40 | L 46 O | 20 LA Chargers | - 5% 30-27 | L 53 O |
| 24 Chicago | - 8 35-13 | W 41 O | D. 4 Houston | - 7% 27-14 | W 46 U | 11 Bye | | | 27 LA RAMS | - 16% 26-10 | L 42 U |
| J. 2 Cincinnati | CANCELLED | | 11 Cincinnati | + 4% 10-23 | L 47 U | 19 LA Rams | - 7% 24-12 | W 40 U | D. 4 Cincinnati | - 2% 24-27 | L 53 U |
| 8 NW ENGLAND | - 8 35-23 | W 44 O | 18 BALTIMORE | - 3 13-3 | W 39 U | 25 Miami | + 3% 26-20 | W 49 U | 11 Denver | - 9 34-28 | L 44 O |
| 15x MIAMI | - 14 34-31 | L 45 O | J. 1 Washington | + 1 24-10 | W 41 U | J. 1 MINNESOTA | - 3 41-17 | W 48 O | 18 Houston-OT | - 14 40-34 | L 48 O |
| 22x CINCINNATI | - 6 10-27 | L 48 L | 8 Pittsburgh | + 2% 14-28 | L 40 O | 8 DETROIT | - 4 16-20 | L 48 U | 24 SEATTLE | - 10% 24-10 | W 50 U |

Figure 7 – NFL Schedules, Spreads, and Statistics for the 2022-23 NFL Season, Part I

NFL SCHEDULES

| | | | | | | | | | | | |
|----------------------------------|-------|--------------|----------------------------------|------|--------------|----------------------------------|-------|--------------|--------------------------------|-------|--------------|
| L.A. CHARGERS (NT) (10-8) | | | MINNESOTA (AT) (13-5) | | | N.Y. JETS (AT) (7-10) | | | SEATTLE (AT) (9-9) | | |
| A. 13# LA RAMS | - 3 | 22-29 L 32 O | A. 14# Las Vegas | + 3% | 20-26 L 34 O | A. 12# Philadelphia | - 1% | 24-21 W 37 O | A. 13# Pittsburgh | + 2 | 25-32 L 39 O |
| 20# DALLAS | - 5 | 18-32 L 37 O | 20# SAN FRAN | - 3% | 7-17 L 38 U | 22# ATLANTA | + 4% | 22-25 W 39 O | 18# CHICAGO | - 4 | 11-27 L 39 U |
| 26# New Orleans | + 4% | 10-27 L 36 O | 27# Denver | + 2% | 13-23 L 35 O | 27# NY GIANTS | - 3% | 31-27 W 40 O | 26# Dallas | - 6% | 26-27 L 38 O |
| S. 11 LAS VEGAS | - 3% | 24-19 W 52 U | S. 11 GREEN BAY | - 2 | 23-7 W 46 U | S. 11 BALTIMORE | + 6% | 9-24 L 44 U | S. 12# DENVER | + 6 | 17-16 W 43 U |
| 15# Kansas City | + 4 | 24-27 W 52 U | 19# Philadelphia | + 3 | 7-24 L 49 U | 18 Cleveland | + 6 | 31-30 W 39 O | 18 San Francisco | + 8% | 7-27 L 39 U |
| 25 JVILLE | - 3 | 10-38 L 42 O | 25 DETROIT | - 6% | 28-24 L 52 T | 25 CINCINNATI | + 6% | 12-27 L 46 U | 25 ATLANTA | - 1 | 23-27 L 44 O |
| O. 2 Houston | - 5% | 34-24 W 46 O | O. 2 New Orleans-N | - 4 | 28-25 L 42 O | O. 2 Pittsburgh | + 3 | 24-20 W 41 O | O. 2 Detroit | + 3% | 48-45 W 49 O |
| 9 Cleveland | - 2 | 30-28 T 47 O | 9 CHICAGO | - 8% | 29-22 L 44 O | 9 MIAMI | + 3 | 40-17 W 46 O | 9 New Orleans | + 5% | 32-39 L 42 O |
| 17# DENVER | - 4 | 19-16 L 45 U | 16 Miami | - 3 | 24-16 W 45 U | 16 Green Bay | + 7% | 27-10 W 44 U | 16 ARIZONA | + 2% | 19-9 W 50 U |
| 23 SEATTLE | - 5 | 23-37 L 51 O | 23 Bye | | | 23 Denver | - 2 | 16-9 W 36 U | 23 LA Chargers | + 5 | 37-23 W 51 O |
| 30 Bye | | | 30 ARIZONA | - 3% | 34-26 W 49 O | 30 NW ENGLAND | + 3 | 17-22 L 40 U | 30 NY GIANTS | - 3 | 27-13 W 44 U |
| N. 6 Atlanta | - 2% | 20-17 W 49 U | N. 6 Washington | - 3 | 20-17 T 43 U | N. 6 BUFFALO | + 10% | 20-17 W 46 U | N. 6 Arizona | + 2 | 31-21 W 49 W |
| 13# San Francisco | + 8 | 16-22 W 45 U | 13 Buffalo-OT | + 6% | 33-30 W 47 O | 13 Bye | | | 13 Tampa Bay-N | + 2% | 16-21 L 45 U |
| 20 KANSAS CITY | + 5% | 27-30 W 53 O | 20 DALLAS | + 2 | 3-40 L 48 U | 20 New England | + 3% | 3-10 L 38 U | 20 Bye | | |
| 27 Arizona | - 2% | 25-24 L 48 O | 24# NW ENGLAND | - 2% | 33-26 W 42 O | 27 CHICAGO | - 7% | 31-10 W 37 O | 27 LS VEGAS-OT | - 4 | 34-40 L 48 O |
| D. 4 Las Vegas | + 2% | 20-27 L 48 U | D. 4 NY JETS | + 3 | 27-22 W 44 U | D. 4 Minnesota | + 3 | 22-27 L 44 O | D. 4 LA Rams | - 6% | 27-23 L 41 O |
| 11# MIAMI | + 3% | 23-17 W 55 U | 11 Detroit | + 2 | 23-34 L 52 O | 11 Buffalo | + 10 | 12-20 W 43 U | 11 CAROLINA | - 4 | 24-30 L 45 O |
| 18 TENNESSEE | - 3 | 17-14 T 46 U | 18 IND/APLIS-OT | - 3% | 39-36 L 47 O | 18 DETROIT | - 2 | 17-20 L 43 U | 15# SAN FRAN | + 3 | 13-21 L 42 U |
| 26# Indianapolis | - 3% | 20-3 W 44 U | 24 NY GIANTS | - 4% | 27-24 L 48 O | 22# JVILLE | - 2% | 3-19 L 36 U | 24 Kansas City | + 10% | 10-24 L 50 U |
| J. 1# LA RAMS | - 6% | 31-10 W 41 T | J. 1 Green Bay | + 3 | 17-41 L 48 O | J. 1 Seattle | - 1% | 6-23 L 43 U | J. 1 NY JETS | + 1% | 23-6 W 43 U |
| 8 Denver | + 6% | 28-31 W 39 O | 8 Chicago | - 6% | 29-13 W 43 O | 8 Miami | + 4 | 6-11 L 37 U | 8 LA RAMS-OT | - 5 | 19-16 L 43 U |
| 14# Jacksonville | - 2 | 30-31 L 47 O | 15# NY GIANTS | - 2% | 24-31 L 48 O | | | | 14# San Francisco | + 9 | 23-41 L 42 O |
| L.A. RAMS (AT) (5-12) | | | NEW ENGLAND (AT) (8-9) | | | PHILA'PHIA (NT) (15-3) | | | TAMPA BAY (NT) (8-10) | | |
| A. 13# LA Chargers | + 3 | 29-22 W 32 O | A. 11# NY GIANTS | + 3 | 21-23 W 35 O | A. 12# NY JETS | + 1% | 21-24 L 37 O | A. 13# MIAMI | - 1% | 24-26 L 33 O |
| 19# HOUSTON | + 2% | 20-24 L 38 O | 19# CAROLINA | - 6% | 20-10 W 37 U | 21# Cleveland | - 1% | 21-20 L 35 O | 20# Tennessee | + 3% | 3-13 L 38 U |
| 27# Cincinnati | + 2% | 7-16 L 36 U | 27# Las Vegas | + 2% | 6-23 L 36 U | 27# Miami | + 3% | 10-48 L 38 O | 27# Indianapolis | + 3% | 10-27 L 41 U |
| S. 8# BUFFALO | + 2 | 10-31 L 52 U | S. 11 Miami | + 3 | 7-20 L 46 U | S. 11 Detroit | - 6 | 38-35 L 49 O | S. 11 Dallas | - 2% | 19-3 W 49 U |
| 18 ATLANTA | - 10 | 31-27 L 46 O | 18 Pittsburgh | - 3 | 17-14 T 40 U | 19# MINNESOTA | - 3 | 24-7 W 49 U | 18 New Orleans | - 2% | 20-10 W 43 U |
| 25 Arizona | - 3% | 20-12 W 48 U | 25 BALTIMORE | + 2% | 26-37 L 45 O | O. 2 JVILLE | - 6% | 29-21 W 44 O | 25 GREEN BAY | - 1% | 12-14 L 42 U |
| O. 3# San Francisco | + 2 | 9-24 L 42 U | O. 2 Green Bay-OT | + 9% | 24-27 W 40 O | 9 Arizona | - 5% | 20-17 L 48 U | O. 2# KANSAS CITY | - 2 | 31-41 L 48 O |
| 9 DALLAS | - 5 | 10-22 L 41 U | 9 DETROIT | + 3 | 29-0 W 47 W | 16# DALLAS | - 7 | 26-17 W 42 O | 9 ATLANTA | - 10 | 21-15 L 46 U |
| 16 CAROLINA | - 10 | 24-10 W 41 U | 16 Cleveland | + 2% | 38-15 W 44 W | 23 Bye | | | 16 Pittsburgh | - 9% | 18-20 L 46 U |
| 23 Bye | | | 24# CHICAGO | - 8% | 14-33 L 40 U | 30 PITTSBURGH | - 11% | 35-13 W 43 O | 23 Carolina | - 13 | 3-21 L 38 U |
| 30 SAN FRAN | - 1 | 14-31 L 43 O | 30 NY Jets | + 3 | 22-17 W 40 U | N. 3# Houston | - 14 | 29-17 L 45 O | 27# BALTIMORE | - 2% | 22-27 L 47 O |
| N. 6 Tampa Bay | + 3 | 13-16 T 42 U | N. 6 IND/APOLIS | - 5 | 26-3 W 40 U | 14# WASHINGTON | - 11 | 21-32 L 43 O | N. 6 LA RAMS | - 3 | 16-13 T 42 U |
| 13 ARIZONA | - 3% | 17-27 L 48 U | 13 Bye | | | 20 Indianapolis | - 6% | 17-16 L 45 U | 13 Seattle-N | - 2% | 21-16 W 45 U |
| 20 New Orleans | + 2% | 20-27 L 39 O | 20 NY JETS | - 3% | 10-3 W 38 U | 27# GREEN BAY | - 6% | 40-33 W 46 O | 20 Bye | | |
| 27 Kansas City | + 16% | 10-26 W 42 U | 24# Minnesota | + 2% | 26-33 L 42 O | D. 4 TENNESSEE | - 4% | 35-10 W 44 O | 27 Cleveland | - 3 | 17-23 L 42 U |
| D. 4 SEATTLE | + 6% | 23-27 W 41 U | D. 1# BUFFALO | + 4 | 10-24 L 43 U | 11 NY Giants | - 7% | 48-22 W 45 O | D. 5# NW ORLEANS | - 3 | 17-16 L 40 U |
| 8# LAS VEGAS | + 6% | 17-16 W 41 U | 12# Arizona | - 2 | 27-13 W 44 U | 18 Chicago | - 8% | 25-20 L 47 U | 11 San Francisco | + 3% | 7-35 L 38 O |
| 19# Green Bay | + 7% | 12-24 L 40 U | 18# Las Vegas | + 2% | 24-30 L 45 O | 24 Dallas | + 4 | 34-40 L 48 O | 18 CINCINNATI | + 3 | 23-34 L 48 O |
| 25# DENVER | + 3 | 51-14 W 36 O | 24 CINCINNATI | + 3 | 18-22 L 41 U | J. 1 NW ORLEANS | - 4% | 10-20 L 42 U | 25# Arizona-OT | - 7% | 19-16 L 41 U |
| J. 1# LA Chargers | + 6% | 10-31 L 41 T | J. 1 MIAMI | + 3 | 23-21 L 42 O | 8 NY GIANTS | - 17 | 22-16 L 43 U | J. 1 CAROLINA | - 3% | 30-24 W 41 O |
| 8 Seattle-OT | + 5 | 16-19 W 43 U | 8 Buffalo | + 8 | 23-35 L 44 O | 21# NY GIANTS | - 8 | 38-7 W 47 U | 8 Atlanta | + 6 | 17-30 L 40 O |
| LAS VEGAS (NT) (6-11) | | | NEW ORLEANS (AT) (7-10) | | | PITTSBURGH (NT) (9-8) | | | TENNESSEE (NT) (7-10) | | |
| A. 4# Jacksonville-N | - 2% | 27-11 W 31 O | A. 13# Houston | + 1% | 13-17 L 36 U | A. 13# SEATTLE | - 2 | 32-25 W 39 O | A. 11# Baltimore | + 3% | 10-23 L 34 U |
| 14# MINNESOTA | - 3% | 26-20 W 34 O | 19# Green Bay | + 3% | 10-20 L 37 U | 20# Jacksonville | + 1% | 16-15 W 41 U | 20# TAMPA BAY | - 3% | 13-3 W 38 U |
| 20# Miami | + 3% | 15-13 W 38 O | 26# LA CHARGERS | - 4% | 27-10 W 36 O | 28# DETROIT | - 6% | 19-9 W 40 U | 27# ARIZONA | - 3% | 26-23 L 35 O |
| 26# NW ENGLAND | - 2% | 23-6 W 36 U | S. 11 Atlanta | - 5% | 27-26 L 44 O | S. 11 Cincinnati-OT | + 7 | 23-20 W 44 U | S. 11 NY GIANTS | - 5% | 20-21 L 44 U |
| S. 11 LA Chargers | + 3% | 19-24 L 52 U | 18 TAMPA BAY | + 2% | 10-20 L 43 U | 18 NW ENGLAND | + 3 | 14-17 T 40 U | 19# Buffalo | + 10 | 7-41 L 47 O |
| 18 ARIZONA-OT | - 5% | 23-29 L 52 T | 25 Carolina | - 2 | 14-22 L 41 U | 22# Cleveland | + 4% | 17-29 L 38 O | 25 LAS VEGAS | + 2 | 24-22 W 45 U |
| 25 Tennessee | - 2 | 22-24 L 45 U | O. 2 Minnesota-N | + 4 | 25-28 W 42 O | O. 2 NY JETS | - 3 | 20-24 L 41 O | O. 2 Indianapolis | + 4 | 24-17 W 43 U |
| O. 2 DENVER | - 2% | 32-23 W 46 O | 9 SEATTLE | - 5% | 39-32 W 45 O | 9 Buffalo | + 14 | 3-38 L 44 U | 9 Washington | Pick | 21-17 W 43 U |
| 10# Kansas City | + 7 | 29-30 W 52 O | 16 CINCINNATI | + 3 | 26-30 L 43 O | 16 TAMPA BAY | + 9% | 20-18 W 46 U | 16 Indy | - 2% | 19-10 W 43 U |
| Bye | | | 20# Arizona | + 2% | 34-42 L 44 O | 23# Miami | + 7 | 10-16 W 44 U | 30 Houston | - 1% | 17-10 W 39 U |
| 23 HOUSTON | - 7 | 38-20 W 46 O | 30 LAS VEGAS | + 1% | 24-0 W 48 U | N. 6 Philadelphia | + 11% | 13-35 L 43 O | N. 6# Kansas City | + 14 | 17-20 W 45 U |
| 30 New Orleans | - 1% | 0-24 L 48 U | N. 7# BALTIMORE | + 1% | 13-27 L 46 U | N. 6 Bye | | | 13 DENVER | - 2% | 17-10 W 39 U |
| D. 6 Jacksonville | - 2% | 20-17 L 48 U | 13 Pittsburgh | + 1 | 10-20 L 39 U | 13 NW ORLEANS | - 1 | 20-10 W 39 U | 17# Green Bay | + 3 | 27-17 W 41 O |
| 13 IND/APOLIS | - 4 | 20-25 L 42 O | 20 LA RAMS | - 2% | 27-20 W 39 U | 20# CINCINNATI | + 3% | 30-37 L 40 O | 27 CINCINNATI | Pick | 16-20 L 42 U |
| 20 Denver-OT | + 2% | 22-16 W 41 U | 27 San Francisco | + 8% | 0-13 L 43 U | 28# Indianapolis | + 2% | 24-17 W 40 O | D. 4 Philadelphia | + 4% | 10-35 L 44 O |
| 27 Seattle-OT | + 4 | 40-34 W 48 U | D. 5# Tampa Bay | + 3 | 16-17 W 40 U | D. 4 Atlanta | - 1% | 19-16 W 42 U | 11 JVILLE | - 3% | 32-26 L 42 O |
| D. 4 LA CHARGERS | - 2% | 27-20 W 49 U | 11 Bye | | | 11 BALTIMORE | - 2 | 14-16 L 36 U | 18 LA Chargers | + 3 | 14-17 T 46 U |
| 8# LA Rams | - 6% | 16-17 L 41 U | 18 ATLANTA | - 5 | 21-18 L 43 U | 24# LAS VEGAS | - 2% | 13-10 W 37 U | 24 HOUSTON | - 3 | 14-19 L 34 U |
| 18# NW ENGLAND | - 2% | 30-24 W 45 O | 24 Cleveland | + 3 | 17-10 W 32 U | J. 1 Baltimore | + 1 | 16-13 W 35 U | 29# DALLAS | + 13% | 13-27 L 41 U |
| 24# Pittsburgh | + 2% | 10-13 L 37 U | J. 1 Philadelphia | + 4% | 20-10 W 42 U | 8 CLEVELAND | - 2% | 28-14 W 40 O | J. 8 Jacksonville | + 6 | 16-20 W 40 U |
| J. 1 SAN FRAN-OT | + 10 | 34-37 W 41 O | 8 CAROLINA | - 3% | 7-10 L 41 U | | | | | | |
| 8 KANSAS CITY | + 8% | 13-31 L 52 U | | | | | | | | | |
| MIAMI (NT) (9-9) | | | N.Y. GIANTS (AT) (10-8-1) | | | SAN FRANCISCO (NT) (15-4) | | | WASHINGTON (NT) (8-8-1) | | |
| A. 13# Tampa Bay | + 1% | 26-24 W 33 O | A. 11# New England | - 3 | 23-21 L 35 O | A. 12# GREEN BAY | - 3% | 28-21 W 36 O | A. 13# CAROLINA | - 2% | 21-23 L 36 O |
| 20# LA VEGAS | - 3% | 13-15 L 41 U | 21# CINCINNATI | - 4% | 25-22 L 37 O | 20# Minnesota | + 3% | 17-7 W 38 U | 20# Kansas City | + 5 | 14-24 L 43 U |
| 27# PHILA'PHIA | - 3% | 48-10 W 38 O | 28# NY Jets | + 3% | 27-31 L 40 O | 25# Houston | - 2% | 0-17 L 37 U | 27# Baltimore | + 6% | 15-17 W 38 U |
| S. 11 NW ENGLAND | - 3 | 20-7 W 46 U | S. 11 Tennessee | + 5% | 21-20 W 44 U | S. 11 Chicago | - 6% | 10-19 L 38 U | S. 11 JVILLE | - 3 | 28-22 W 43 O |
| 18 Baltimore | + 3% | 42-38 W 44 O | 18 CAROLINA | + 1 | 19-16 W 43 U | 18 SEATTLE | - 8% | 27-7 W 39 U | 18 Detroit | + 5% | 8-24 L 47 U |
| 25 BUFFALO | + 4 | 21-19 W 54 U | 26# DALLAS | - 1 | 16-23 L 38 O | 25# Denver | - 1% | 10-11 L 45 U | 25 PHILA'PHIA | + 3 | 10-25 L 41 U |
| 29# Cincinnati | + 4 | 15-27 L 49 U | O. 2 CHICAGO | - 3 | 20-12 W 39 U | O. 3# LA RAMS | - 2 | 24-9 W 42 U | O. 2 Dallas | + 3 | 10-25 L 41 U |
| O. 9 NY Jets | - 3 | 17-40 L 46 O | 9 Green Bay-N | + 9 | 27-22 W 42 O | 9 Carolina | - 6 | 37-15 W 40 O | 9 TENNESSEE | Pick | 17-21 L 43 U |
| 16 MINNESOTA | + 3 | 16-24 L 45 U | 16 BALTIMORE | + 5% | 24-20 W 45 U | 16 Atlanta | - 3% | 14-28 L 45 U | 13# Chicago | - 1 | 12-7 W 39 U |
| 23# PITTSBURGH | - 7 | 16-10 L 44 U | 23 Jacksonville | + 3 | 23-17 W 44 U | 23 KANSAS CITY | + 1 | 23-44 L 49 O | 30 GREEN BAY | + 4 | 23-21 W 42 O |
| 30 Detroit | - 4 | 31-27 T 53 O | 30 Seattle | + 3 | 13-27 L 44 U | 30 LA Rams | + 1 | 31-14 W 43 O | 30 Indianapolis | + 2% | 17-16 W 39 U |
| N. 6 Chicago | - 4 | 35-32 L 46 O | N. 6 Bye | | | N. 6 Bye | | | N. 6 MINNESOTA | + 3 | 17-20 T 49 U |
| 13 CLEVELAND | - 3 | 39-17 W 50 O | 13 HOUSTON | - 5 | 24-16 W 41 U | D. 4 WASHINGTON | + 2% | 20-20 W 41 O | 14# Philadelphia | + 11 | 32-21 W 43 O |
| 20 Bye | | | 20 DETROIT | - 3 | 18-31 L 45 O | 11 PHILA'PHIA | + 7% | 22-48 L 45 O | 20 Houston | - 3 | 23-10 W 40 U |
| 27 HOUSTON | - 14 | 30-15 W 47 U | 24 Dallas | + 10 | 20-28 W 46 O | 18 Washington | + 4 | 20-12 W 40 U | 27 ATLANTA | - 3% | 19-13 W 40 U |
| D. 4 San Francisco | + 5 | 17-33 L 46 O | D. 4 WASHINGTON | + 2% | 20-20 W 41 O | 16 Baltimore | + 4% | 24-27 W 48 U | D. 4 NY Giants | - 2% | 20-20 L 41 O |
| 11# LA Chargers | - 3% | 17-23 L 55 U | 18 Washington | + 4 | 20-12 W 40 U | 15# Seattle | - 3 | 21-13 W 42 U | 11 Bye | | |
| 18# Buffalo | + 7 | 29-32 W 45 O | 24 Minnesota | + 4% | 24-27 W 48 U | 24 WASHINGTON | - 6 | 37-20 W 37 O | 18 NY GIANTS | - 4 | 12-20 L 40 U |
| 25 GREEN BAY | - 3% | 20-36 L 49 U | J. 1 IND/APOLIS | - 5% | 38-10 W 39 O | J. 1 Las Vegas-OT | - 10 | 37-34 L 41 O | 24 San Francisco | + 6 | 20-37 L 37 O |
| J. 1 New England | + 3 | 21-23 W 42 O | 15# Minnesota | + 2% | 31-24 W 48 O | 8 ARIZONA | - 14% | 38-13 W 40 O | J. 1 CLEVELAND | - 1 | 10-24 L 41 U |
| 8 NY JETS | - 4 | 11-6 W 37 U | 21# Philadelphia | + 8 | 7-38 L 47 U | 14# SEATTLE | - 9 | 41-23 W 42 O | 8 DALLAS | + 7% | 26-6 W 41 U |
| 15# Buffalo | + 14 | 31-34 W 45 O | | | | 22# DALLAS | - 3% | 19-12 W 46 U | | | |

Figure 8 – NFL Schedules, Spreads, and Statistics for the 2022-23 NFL Season, Part II

The following is a condensed spreadsheet of each teams results against the spread for the 2022-23 NFL season. This spreadsheet portrays whether a team covered the spread, indicated by a “W” for win, or failed to do so, indicating an “L” for loss. The results were consistent with historical archives as every team eventually recorded a win against the spread. The best record was held by the New York Giants at 13-4, while the worst record was held by the Tampa Bay Buccaneers at 4-12-1. The Bucs still managed to win their division but kept their dismal performance against the spread alive in the first round of the playoffs, as they were throttled by the Dallas Cowboys, at home, in what would ultimately be Tom Brady’s final NFL game.

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 | Week 13 | Week 14 | Week 15 | Week 16 | Week 17 | Week 18 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|------------|---------|
| Arizona Cardinals | L | W | L | W | W | L | W | L | L | W | L | W | BYE | L | W | L | W | L |
| Atlanta Falcons | W | W | W | W | W | W | L | L | L | L | W | L | BYE | W | L | L | W | W |
| Baltimore Ravens | W | L | W | PUSH | L | L | L | W | W | L | L | L | W | L | W | L | W | W |
| Buffalo Bills | W | W | L | PUSH | W | W | BYE | L | L | L | W | L | W | L | L | W | No Contest | W |
| Carolina Panthers | L | L | W | L | L | L | W | W | L | W | W | W | BYE | W | L | W | L | W |
| Chicago Bears | W | L | PUSH | L | W | L | W | L | W | L | L | L | L | BYE | W | L | L | L |
| Cincinnati Bengals | L | L | W | W | W | W | W | L | W | BYE | W | W | W | W | W | W | No Contest | L |
| Cleveland Browns | W | L | W | L | PUSH | L | W | W | BYE | L | L | W | W | L | W | L | W | L |
| Dallas Cowboys | L | W | W | W | W | L | W | W | BYE | L | W | L | W | L | L | W | W | L |
| Denver Broncos | L | L | W | L | L | W | L | W | BYE | L | L | L | W | W | W | L | W | L |
| Detroit Lions | W | W | W | L | L | BYE | L | PUSH | W | W | W | W | W | W | W | L | W | W |
| Green Bay Packers | L | W | W | L | L | L | L | W | L | W | L | L | W | BYE | W | W | W | L |
| Houston Texans | W | L | PUSH | L | W | BYE | L | L | W | L | L | L | L | W | W | W | L | W |
| Indianapolis Colts | L | L | W | L | W | W | L | L | L | W | W | L | L | BYE | W | L | L | L |
| Jacksonville Jaguars | L | W | W | L | L | L | L | L | W | L | BYE | W | L | W | W | W | W | L |
| Kansas City Chiefs | W | L | L | W | L | L | W | BYE | L | W | L | L | L | L | L | W | L | W |
| Las Vegas Raiders | L | L | L | W | W | BYE | W | L | L | L | W | W | W | L | W | L | W | L |
| Los Angeles Chargers | W | W | L | W | PUSH | L | L | BYE | W | W | W | L | L | W | PUSH | W | W | W |
| Los Angeles Rams | L | L | W | L | L | W | BYE | L | PUSH | L | L | W | W | W | L | W | L | W |
| Miami Dolphins | W | W | W | L | L | L | L | PUSH | L | W | BYE | W | L | L | W | L | W | W |
| Minnesota Vikings | W | L | L | L | L | W | BYE | W | PUSH | W | L | W | W | L | L | L | L | W |
| New England Patriots | L | W | L | W | W | W | L | W | W | BYE | W | L | L | W | L | L | L | L |
| New Orleans Saints | L | L | L | W | W | L | L | W | L | L | W | L | W | BYE | L | W | W | L |
| New York Giants | W | W | L | W | W | W | W | L | BYE | W | L | W | W | L | W | W | W | W |
| New York Jets | L | W | L | W | W | W | W | L | W | BYE | L | W | L | W | L | L | L | L |
| Philadelphia Eagles | L | W | W | W | L | W | BYE | W | L | L | L | W | W | W | L | L | L | L |
| Pittsburgh Steelers | W | PUSH | L | L | L | W | W | L | BYE | W | L | W | W | L | W | W | W | W |
| San Francisco 49ers | L | W | L | W | W | L | L | W | BYE | L | W | W | W | W | W | W | L | W |
| Seattle Seahawks | W | L | L | W | L | W | W | W | W | L | BYE | L | L | L | L | L | W | L |
| Tampa Bay Buccaneers | W | W | L | L | L | L | L | L | PUSH | W | BYE | L | L | L | L | L | W | L |
| Tennessee Titans | L | L | W | W | W | BYE | W | W | W | W | W | L | L | L | PUSH | L | L | W |
| Washington Commander | W | L | L | L | L | W | W | W | PUSH | W | W | W | L | BYE | L | L | L | W |

Figure 9 – Against the Spread Weekly Results for all 32 NFL Teams During the 2022-23 NFL Season

After conducting the analysis, every team covered a point spread by the end of Week 4, as is evident by the results below.

These results were very surprising as I presumed that at least a few teams would struggle to cover a spread until later in the season, and an extensive amount of money would be required as the wagers doubled each week.

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 | Week 13 | Week 14 | Week 15 | Week 16 | Week 17 | Week 18 |
|-----------------------|-------------|---------|-------------|-------------|--------|--------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Arizona Cardinals | L | W | | | | | | | | | | | | | | | | |
| Atlanta Falcons | W | | | | | | | | | | | | | | | | | |
| Baltimore Ravens | W | | | | | | | | | | | | | | | | | |
| Buffalo Bills | W | | | | | | | | | | | | | | | | | |
| Carolina Panthers | L | L | W | | | | | | | | | | | | | | | |
| Chicago Bears | W | | | | | | | | | | | | | | | | | |
| Cincinnati Bengals | L | L | W | | | | | | | | | | | | | | | |
| Cleveland Browns | W | | | | | | | | | | | | | | | | | |
| Dallas Cowboys | L | W | | | | | | | | | | | | | | | | |
| Denver Broncos | L | L | W | | | | | | | | | | | | | | | |
| Detroit Lions | W | | | | | | | | | | | | | | | | | |
| Green Bay Packers | L | W | | | | | | | | | | | | | | | | |
| Houston Texans | W | | | | | | | | | | | | | | | | | |
| Indianapolis Colts | L | L | W | | | | | | | | | | | | | | | |
| Jacksonville Jaguars | L | W | | | | | | | | | | | | | | | | |
| Kansas City Chiefs | W | | | | | | | | | | | | | | | | | |
| Las Vegas Raiders | L | L | L | W | | | | | | | | | | | | | | |
| Los Angeles Chargers | W | | | | | | | | | | | | | | | | | |
| Los Angeles Rams | L | L | W | | | | | | | | | | | | | | | |
| Miami Dolphins | W | | | | | | | | | | | | | | | | | |
| Minnesota Vikings | W | | | | | | | | | | | | | | | | | |
| New England Patriots | L | W | | | | | | | | | | | | | | | | |
| New Orleans Saints | L | L | L | W | | | | | | | | | | | | | | |
| New York Giants | W | | | | | | | | | | | | | | | | | |
| New York Jets | L | W | | | | | | | | | | | | | | | | |
| Philadelphia Eagles | L | W | | | | | | | | | | | | | | | | |
| Pittsburgh Steelers | W | | | | | | | | | | | | | | | | | |
| San Francisco 49ers | L | W | | | | | | | | | | | | | | | | |
| Seattle Seahawks | W | | | | | | | | | | | | | | | | | |
| Tampa Bay Buccaneers | W | | | | | | | | | | | | | | | | | |
| Tennessee Titans | L | L | W | | | | | | | | | | | | | | | |
| Washington Commanders | W | | | | | | | | | | | | | | | | | |
| \$ required by week | \$ 3,200.00 | \$3,200 | \$ 3,000.00 | \$ 1,200.00 | = | \$ 10,600.00 | | | | | | | | | | | | |
| Total profit | \$ - | \$ - | \$ 1,600.00 | \$ 1,600.00 | = | \$ 3,200.00 | | | | | | | | | | | | |

Figure 10 – Against the Spread Weekly Results for all 32 NFL Teams During the 2022-23 NFL Season, with Applicable Outcomes and Profitability Relative to Applying the Martingale System Strategy

However, just \$10,600 was needed in order to take in \$13,800 and make \$100 profit on each team for a total profit of \$3,200. Just four weeks was necessary to make a 30.19% return on the capital deployed. However, these results should not be relied upon as a sure way to make such returns with so little capital up front. Had the system continued on for weeks with any particular team failing to cover a spread, the money required for this system would compound quickly, and a bettor would be at an increased risk of being victim to the first NFL team to ever

lose every game against the spread which would result in a \$6,536,000 loss. Although history shows that this strategy has always paid off, the day that the tides turn would result in a massive deficit for those engaged in this strategy if a team were to fail to cover a point spread for the entire season.

Even if history held true and every team eventually covered a spread at least once during the season, there is a chance that a team goes winless for an extended period of time and a significant amount of money would be necessary to continue the strategy. Say for example a team lost 11 straight games against the spread, the 12th game would require a \$204,800 bet. It's highly unlikely someone would have the funds to fully carry out this strategy and it's an incredibly expensive endeavor in order to profit a fraction of your stake (In this case a \$3,200 profit carrying the slight but possible potential of a \$6.5 million loss). Therefore, although this strategy has shown promise throughout each NFL season, it should be utilized with extreme caution.

Betting Against Public Sentiment in the NCAA Tournament

As mentioned in Chapter 3, “fading the public” is a strategy in which a bettor chooses to place wagers on the side fielding less public betting handle. Knowing how difficult it is to be a profitable bettor, and how successful that most large sportsbooks are, some bettors choose to utilize this strategy due to their belief that the sportsbooks in Las Vegas have lots of data and analytical tools at their disposal which may offer a better insight into the outcome of an event, but largely because they believe the casual sports bettor is not that smart and bets based on what they think is obvious but often leads to a losing proposition. Though this strategy could be tested

across any sports or competitions that track the amount of public handle on each side of a spread, I chose to record all of the public betting handle statistics ahead of the first round of the 2023 Men's NCAA Tournament in order to see if fading the public would result in a profitable endeavor and potentially reveal a significant result that may indicate a trend among college basketball betting.

First, I created a spreadsheet with each of the 32 first round contests in the NCAA Tournament. I included the closing spread as of the start of the game from Thespread.com, as well as the percentage of handle on one side or another sourced from three different reputable sources in order to get an average that was most indicative of the percentage of public money on each side of the spread. Then, based upon which team was fielding the minority of wagers, I tracked whether or not betting on that team resulted in a win or a loss against the spread according to the final score. The results for Thursday's 16 matchups are as follows.

| | Matchups | Closing Odds | % of Money Action Network | TheSpread | VSIN | Average Public Betting Handle | FTP Pick | Final Score | Pick Result |
|-------------------------|-------------------|--------------|------------------------------|-----------|------|-------------------------------|------------------|-------------|-------------|
| Thursday 3/16/23 | West Virginia | -2.5 | 67% | 67% | 67% | 67.00% | | 65 | |
| | Maryland | | 33% | 33% | 33% | 33.00% | Maryland +2.5 | 67 | W |
| | Furman | | 60% | 60% | 62% | 60.67% | | 68 | |
| | Virginia | -6 | 40% | 40% | 38% | 39.33% | Virginia -6 | 67 | L |
| | Utah State | -1.5 | 43% | 43% | 47% | 44.33% | Utah State -1.5 | 65 | L |
| | Missouri | | 57% | 57% | 53% | 55.67% | | 76 | |
| | Howard | | 38% | 38% | 27% | 34.33% | Howard +22 | 68 | L |
| | Kansas | -22 | 62% | 62% | 73% | 65.67% | | 96 | |
| | Texas AM CC | | 25% | 25% | 16% | 22.00% | TAM +24.5 | 75 | W |
| | Alabama | -24.5 | 75% | 75% | 84% | 78.00% | | 96 | |
| | Charleston | | 52% | 52% | 60% | 54.67% | | 57 | |
| | SDSU | -5.5 | 48% | 48% | 40% | 45.33% | SDSU -5.5 | 63 | W |
| | Princeton | | 30% | 30% | 34% | 31.33% | Princeton +14.5 | 59 | W |
| | Arizona | -14.5 | 70% | 70% | 66% | 68.67% | | 55 | |
| | Illinois | | 27% | 28% | 28% | 27.67% | Illinois +2 | 63 | L |
| | Arkansas | -2 | 73% | 72% | 72% | 72.33% | | 73 | |
| | Auburn | -1.5 | 71% | 71% | 67% | 69.67% | | 83 | |
| | Iowa | | 29% | 29% | 33% | 30.33% | Iowa +1.5 | 75 | L |
| | Oral Roberts | | 62% | 63% | 46% | 57.00% | | 51 | |
| | Duke | -6.5 | 38% | 37% | 54% | 43.00% | Duke -6.5 | 74 | W |
| | Colgate | | 44% | 42% | 71% | 52.33% | | 61 | |
| | Texas | -13.5 | 56% | 58% | 29% | 47.67% | Texas -13.5 | 81 | W |
| | Boise State | | 45% | 46% | 37% | 42.67% | Boise State +1.5 | 67 | L |
| | Northwestern | -1.5 | 55% | 55% | 63% | 57.67% | | 75 | |
| | Northern Kentucky | | 16% | 16% | 37% | 23.00% | NKU +18.5 | 52 | W |
| | Houston | -18.5 | 84% | 84% | 63% | 77.00% | | 63 | |
| | Louisiana | | 63% | 64% | 74% | 67.00% | | 55 | |
| | Tennessee | -11.5 | 37% | 36% | 26% | 33.00% | Tennessee -11.5 | 58 | L |
| | Penn State | | 59% | 61% | 61% | 60.33% | | 76 | |
| | Texas A&M | -3 | 41% | 39% | 39% | 39.67% | TAM -3 | 59 | L |
| | UNC Asheville | | 61% | 61% | 75% | 65.67% | | 53 | |
| | UCLA | -17.5 | 39% | 39% | 25% | 34.33% | UCLA -17.5 | 86 | W |

Figure 11 – First Round Matchups from Day 1 of the 2023 NCAA Tournament with Corresponding Spreads, Public Handle, Picks, and Results

Evidently, the strategy resulted in 8 wins and 8 losses, failing to provide strong evidence in favor or denial of the strategy at hand. In fact, most bettors paying a small fee for their bets known as the “juice” would have lost money with this strategy on the first day of the tournament. Is it possible that staying consistent with this strategy and examining a larger sample size may prove profitable? I continued on to analyze Friday’s 16 matchups below.

| | Matchups | Closing Odds | % of Money Action Network | The Spread | VSIN | Average Public Betting Handle | FTP Pick | Final Score | Pick Result |
|----------------|----------------|--------------|------------------------------|------------|------|-------------------------------|--------------------|-------------|-------------|
| Friday 3/17/23 | USC | | 47% | 46% | 39% | 44.00% | USC +2 | 62 | L |
| | Michigan State | -2 | 53% | 54% | 61% | 56.00% | | 72 | |
| | Kennesaw State | | 68% | 68% | 73% | 69.67% | | 67 | |
| | Xavier | -12.5 | 32% | 32% | 27% | 30.33% | Xavier -12.5 | 72 | L |
| | UCSB | | 54% | 54% | 68% | 58.67% | | 56 | |
| | Baylor | -10.5 | 46% | 46% | 32% | 41.33% | Baylor -10.5 | 74 | W |
| | VCU | | 71% | 71% | 72% | 71.33% | | 51 | |
| | Saint Mary's | -4.5 | 29% | 29% | 28% | 28.67% | Saint Mary's -4.5 | 63 | W |
| | Vermont | | 64% | 64% | 64% | 64.00% | | 61 | |
| | Marquette | -10.5 | 36% | 36% | 36% | 36.00% | Marquette -10.5 | 78 | W |
| | Pittsburgh | | 70% | 71% | 48% | 63.00% | | 59 | |
| | Iowa State | -4.5 | 30% | 29% | 52% | 37.00% | Iowa State -4.5 | 41 | L |
| | NC State | | 21% | 21% | 42% | 28.00% | NC State +5.5 | 63 | L |
| | Creighton | -5.5 | 79% | 79% | 58% | 72.00% | | 72 | |
| | Iona | | 58% | 58% | 70% | 62.00% | | 63 | |
| | Uconn | -9.5 | 42% | 42% | 30% | 38.00% | Uconn -9.5 | 87 | W |
| | FDU | | 67% | 67% | 66% | 66.67% | | 63 | |
| | Purdue | -23 | 33% | 33% | 34% | 33.33% | Purdue -23 | 58 | L |
| | Providence | | 32% | 32% | 23% | 29.00% | Providence +4.5 | 53 | L |
| | Kentucky | -4.5 | 68% | 68% | 77% | 71.00% | | 61 | |
| | Drake | | 67% | 68% | 50% | 61.67% | | 70 | |
| | Miami | -2.5 | 33% | 32% | 50% | 38.33% | Miami -2.5 | 82 | W |
| | Grand Canyon | | 27% | 28% | 31% | 28.67% | Grand Canyon +14.5 | 56 | W |
| | Gonzaga | -14.5 | 73% | 72% | 69% | 71.33% | | 63 | |
| | FAU | | 33% | 33% | 54% | 40.00% | FAU +2 | 66 | W |
| | Memphis | -2 | 67% | 67% | 46% | 60.00% | | 65 | |
| | Montana State | | 60% | 61% | 71% | 64.00% | | 65 | |
| | Kansas State | -8.5 | 40% | 39% | 29% | 36.00% | Kansas State -8.5 | 77 | W |
| | Kent State | | 59% | 60% | 51% | 56.67% | | 60 | |
| | Indiana | -4.5 | 41% | 40% | 49% | 43.33% | Indiana -4.5 | 71 | W |
| | Arizona State | | 30% | 30% | 32% | 30.67% | ASU +5.5 | 70 | W |
| | TCU | -5.5 | 70% | 70% | 68% | 69.33% | | 72 | |

Figure 12 - First Round Matchups from Day 2 of the 2023 NCAA Tournament with Corresponding Spreads, Public Handle, Picks, and Results

Midway through the day, similar results led me to assume that this strategy was not going to emerge as a profitable one, based on this slew of games. However, after the Providence vs. Kentucky game concluded in another loss, resulting in a 4-6 record on the day up until that point, the final six wagers went on an incredible run, going undefeated and flipping the overall record to 18 wins and 14 losses.

| Results | | | |
|-----------|------|--------|----------------|
| | Wins | Losses | Rate of Return |
| Overall | 18 | 14 | 28.6% |
| Favorites | 11 | 7 | 57.1% |
| Underdogs | 7 | 7 | 0.0% |

Figure 13 – Against the Spread Results of the Fade the Public Strategy Across the First Round of the 2023 NCAA Tournament

After all was said and done, utilizing the “fade the public” strategy for the first round of the 2023 Men’s NCAA Tournament resulted in a 28.6% rate of return, not accounting for the juice taken by the sportsbooks which ranges from bet to bet. I also decided to include a separate record for both favorites and underdogs in order to see if there were any glaring differences. Betting on the favorites alone would have resulted in 11 wins out of 18 wagers for a 57.1% rate of return. A great success rate but again, a small sample size. This is potentially something that could be worthwhile for further analysis throughout past tournaments. The underdogs did not post a result of any significance, going just 7-7 over the course of both days.

Chapter 5

Conclusions and Avenues for Further Research

After researching four different betting strategies and providing statistical analysis for three, the results of my analyses reflect that although there is never a surefire way to return a profit betting on sports, having a strategic approach to one's wagers does have the ability to increase one's chances of success.

To start, I researched how betting on trends has led to profits in certain scenarios. To add to this research, I completed a statistical analysis on a trend that I had been curious about for a while and which I had heard about throughout this past NFL season. That trend revolved around heavy underdogs in the NFL and their success in covering the spread against large favorites. I recorded data for this phenomena and framed it so that I could also examine the data under different parameters such as when these teams were on the road versus at home. In the end, I found that the data I collected, which spanned over most of the entire history of the NFL, demonstrated that there was opportunity in betting on heavy underdogs and especially on heavy home underdogs. The historical results were profitable in all three instances of overall 10+ point underdogs, home 10+ point underdogs, and road 10+ point underdogs.

Additionally, if a bettor were to have used this strategy during the 2022 NFL season, they would have been profitable in all three instances as well, especially with 10+ point home underdogs having gone an astounding 5-1 for an 83.33% winning percentage. In this case, I think that utilizing prior data proved to encourage returns in this capacity and ultimately gives merit to the idea that strategies can aid one's profitability. As far as avenues for taking this research further, I think that within each of these cases there is potential to analyze each game and maybe pick up on further trends such as games featuring division rivals, what time of year the games

were, and eliminating games that “didn’t matter” or were late in the season involving teams already eliminated from playoff contention.

Next, continuing my focus on the NFL, I thought it may be advantageous to review the Martingale system and test its efficiency while betting on NFL spreads. This possibility first piqued my interest when I read a report detailing that no NFL team has ever gone winless against the spread in the modern history of the NFL. Therefore, the Martingale system would have succeeded in every year prior to now, but I was still curious whether this strategy was realistic considering the amount of capital required and the large risk to be taken if such an occurrence where a team did not cover a spread all season long did come to fruition. To demonstrate how this strategy worked and how much money was necessary, I created a spreadsheet that analyzed the strategy among all 32 NFL teams for the most recent NFL season. To my surprise, the Martingale system took just four weeks to pay off in this particular NFL season and for a \$100 unit bettor, just \$10,600 was needed in order to win \$13,800, or a \$100 profit on each NFL team. According to my analysis, this strategy seems simple and lucrative, generating a 30.19% return for \$3,200 in profit in just four weeks. However, a more comprehensive analysis could be done in order to determine whether this timeline generally holds up across every NFL season to date. My assumption would be that it usually takes a longer time and more money in order to see this strategy through, and in the slight chance that an NFL team fails to cover a spread across an entire season, this strategy would result in millions lost. Further research may conclude that the risks outweigh the rewards.

Lastly, betting against public sentiment in the first round of the NCAA Tournament proved to be profitable, but I would hesitate to say that this strategy is likely to lead to profitability every year or across any sport. The first round of the 2023 Men’s NCAA

Tournament resulted in 18 wins and 14 losses for the fade the public strategy. Though the outcome was profitable, my sample size was small, and my results were nothing highly significant, so perhaps tracking this strategy over a longer period of time across more contests may provide stronger evidence in favor or against the strategy.

This is a great possibility for further research, however the lack of archival data of historical public betting percentages presents a challenge to assess the strategy's success based off of past results. Additionally, as I briefed earlier, tracking situations where there is a "line freeze" and assessing the profitability of betting on those may reveal some profitable outcomes that take the fade the public strategy one step further. However, this phenomena would take a long time to gather a valid sample size as this is an occurrence which only happens so often.

Appendix -

Sports Betting Terminology

The *Spread*, or the *Line*, are synonymous terms that are meant to indicate a fair point differential between two opponents based on past results, future indicators, and how the teams match up against each other.

Favorites and *Underdogs* are common terms which signify the team that is most likely to win the competition and the team that is likely to lose the competition, respectively.

A *Unit* refers to the usual amount that any specific bettor places on their wagers. Though this can obviously fluctuate based on one's confidence in a wager, bettors often use a similar amount on each bet, say \$10, based on their level of disposable income.

The "*Juice*" is a term that refers to the slight fee that sportsbooks take from each wager made by a bettor. For example, if one were to win a \$10 bet with -110 odds, they would net a profit of \$9.09, with their sportsbook taking 91 cents, commonly known as the juice, for hosting their wager.

The *Handle* of a specific contest refers to how much money has been placed on one side or another on any specific wager. If the favorite of a specific contest is receiving 70% of the betting handle, this means that 70% of all the money placed on this certain game is on the side of the favorite's point spread.

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B.A.M Ticketing

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Strategy and Development Intern

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- Composed a 64-page research thesis containing an overview of trends within the industry to be included in an online publication with the goal to increase awareness of the company's blockchain-based event ticketing suite
- Researched and pitched potential public funding opportunities, including a national startup competition which the company later attended and won their respective category along with \$3,333 of consulting services
- Directed the creation of the company's virtual share option plan, rewarding 6 employees based upon seniority, management level, and base salary

Permira

New York, NY

Private Equity Research Intern, part-time concurrent with fall semester courses

Oct 2021 – Dec 2021

- Collaborated with 4 associates within the Healthcare and Services deal teams to research 70 prospective companies to ultimately strengthen Permira's pipeline of potential investment targets for the upcoming year
- Mapped 47 healthcare technology and 23 recruitment process outsourcing companies to derive notable metrics while focusing on enterprise value, EBITDA, and annual revenue
- Presented target company investment pitch, emphasizing 3-year industry CAGR of 28% and 126% employee growth

Thousand Islands Club Restaurant

Wellesley Island, NY

Waiter

Jun 2021 – Aug 2021

- Entrusted with large parties regularly, earning position of #1 in sales among all servers for duration of employment
- Prioritized accurate and timely distribution of entrees while managing 6 or more tables at any given time
- Engaged with customers to provide a pleasurable dining experience while regularly receiving tips exceeding 20%

LEADERSHIP AND ACTIVITIES

Penn State Men's Club Volleyball

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Social Media Coordinator and Member

Sep 2019 – Present

- Created engaging content on Instagram to enhance awareness for team fundraising initiatives and activities
- Reached over 7,000 accounts in the final 3 months of 2021, a 129% increase in engagement from previous 3 months
- Conveyed information professionally and concisely on behalf of the club and 27 respective members

Morning Brew

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- Led team of 3 fellow students to increase interaction among the Penn State student body with the Morning Brew business newsletter
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