

# The NFL Draft System

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## Introduction

The purpose of this paper is to study the National Football League (NFL) draft system. We hope to accomplish several things. First, we shall review the NFL and what this market is made up of. Second, we will layout the rules of the draft. Third, we shall analyze market specific questions.

## Football and the National Football League

American football<sup>A</sup> originated from soccer and rugby. Back in 1869, Rutgers and Princeton<sup>B</sup> played the first football game [NFL]. Today, football has become a very distinctive game and the football business is a multi-million dollar industry.

A football game is played by two teams. The game is played on a 100-yard long field. The two ends of the field are called end-zones. Each team has its own end-zone. The objective of the game is to put the football into the opponent's end-zone as often as possible (offense), and to defend one's own end-zone (defense).

Each team has numerous players that fall into one of three categories: offense, defense, and special teams (to decide where on the field offense will start for a play). Professional games are made up of four 15-minute quarters. At any moment in time during a game, either one team plays offense and the other team plays defense, or both teams play special teams against each other. Unlike other team sports such as basketball where players play both offense and defense, football players highly specialize and typically play for a specific position in one of the categories, for example, as running back or quarterback full-time for the offense. Very few football players get to play multiple positions. These days it is uncommon, however, for a wide receiver to also play kick return.

Football is played throughout the US: from young kids to colleges to professional. The major professional league in the world is the National Football League

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<sup>A</sup> We will call it football, not to be confused with soccer, which is known as football everywhere other than the US...

<sup>B</sup> The game was a modified version of soccer plus rugby. Some other sources say the first game was instead played by McGill and Harvard.

(NFL)<sup>C</sup>. In the NFL there are 32 teams, divided into two separate conferences (the National Football Conference or the American Football Conference), each with four divisions made up of four teams. The NFL was formed many decades ago and had gone through numerous mergers.

The labor supply (the players) for the NFL come from three sources: 1) drafting players coming out of college; 2) trading players with other teams; 3) signing players from the free-agency market. A free-agency player is one that does not have an existing contract with an NFL team and can freely sign with any teams<sup>D</sup>.

NFL imposes restrictions on each team's rosters. Each team has a salary cap on its entire payroll (the current is about 75MM per team). This salary cap creates lots of strategic behaviors and incentives for teams to draft, trade, and sign players. Good NFL players command very high salaries in the millions, and on a typical team a few star players command most of the salary cap.

## Overview of the Draft

The first NFL draft was conducted in 1936. Before that time, there were only nine teams and they were signing players as they wish. Strong teams were richer and more attractive and became even stronger. The draft was created to allow the weaker teams to select better young players, in order to create more balanced competition (some authors have suggested that balanced competition was not really attained [Sieg95]). The teams with the worse records would have higher picks (i.e. better players) than the better teams (i.e. the championship team). This basic "rule" has been used in many other sports leagues such as basketball.

The NFL draft is held annually, between the Super Bowl championship (end of January) and the start of the next season (September).

The draft allows all NFL teams to select players coming mainly out of US colleges. The two types of agents in the market are players and teams. Each team will draft multiple players but each player can only be drafted by at most one team (or not be drafted at all). This "rule" is enforced at the league level – NFL teams simply cannot go after players another team drafted.

The teams are one of the thirty-two teams of the NFL. The players are the thousands of football players in college teams around the country. For each draft,

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<sup>C</sup> As of writing there are three other leagues: the Arena Football League, which is an indoor-version of NFL with fewer players; NFL Europe, which is a smaller and young league played by mainly second-tier athletes that cannot make the NFL or are released by NFL teams; and the Canadian Football League.

<sup>D</sup> This includes existing NFL players that are not re-signed by their own teams; as well as *anyone* not playing in the NFL, including un-drafted college players, or sometimes an ordinary person that somehow was discovered to be of NFL quality. Michael Lewis of the New Orleans Saints was working as a beer truck driver before becoming one of the best special team returner of the game.

there are numerous rounds of picks, with each round comprised of at least thirty-two picks (one per team). However, there are some other complicated rules that make the total picks unpredictable (e.g. the league awards more picks to expansion teams that are recently formed). In 2003, for instance, there were a total of two hundred and sixty two picks.

### ***The Talent Pool***

How much a player earns (and how much the team that picks him pays) depends on when the player is picked. The higher position a player is picked, the more he earns. For example, the number one pick can earn about \$40-50MM for five to six years, along with signing bonus in the range of \$10MM. The second pick may earn drastically less. In 2002 the 2<sup>nd</sup> pick player had a \$20MM contract vs. \$47MM offered to the first pick. The low pick players in late rounds (like rounds five to seven) do not usually make much more than the minimum salary of about \$250K a year.

Because of the stakes involved, each player is usually teamed up with a sports agent, who handles all the discussions with teams and helps pitch his client's capabilities. The agent gets paid a percentage of a player's contract worth. Hence her incentive is to increase her client's pick position, or the probability that the client will be picked at all.

Even though there is currency involved, teams do not treat players as exact substitutes, particularly for high picks. This is again due to the highly specialized skills of different NFL players.

### ***Rookie Salary Cap***

In addition to salary cap, each team also has a rookie cap. That is the total amount of dollars a team can spend on all the rookies it signed. The amount is usually in the range of four to five million dollars per team. Hence, teams have strong incentives to manage their picks carefully – if they can obtain the same player with a lower pick, they can save lots of money particularly if that is a high pick player. That translates into savings which the team can later use to sign up un-drafted college players.

### ***Pre-Draft***

To pick players well, teams need to know who the players are. Teams spend lots of money on researching available talent. They call it "scouting." Each team has a team of scouts that travel around the country to evaluate both candidates for the upcoming draft, as well as younger players for future drafts [Whit92].

In addition, the league also sponsors events such as the NFL Combine in February, for players to work out in front of officials of all the NFL teams. In addition, teams can conduct mini-camps to evaluate players they are interested in.

However, teams are not allowed to discuss money and contract with players. They can probably at most push the players to tell them whether they are their “1<sup>st</sup> choice” or if they “would consider playing for our team at all” as signals to draft them or not. The reason is that players are under no obligation to have to sign contracts with an NFL team – they can decide not to join the NFL at all.<sup>E</sup>

## **Draft Rules Details**

In this section, we will discuss the rules of the NFL draft that all teams and players follow.

### ***Time and Location***

The draft happens over two days. The location of the draft is typically in an arena such as the Madison Square Garden in New York City. The NFL commissioner and his helpers will be present to oversee the draft and monitor progress. The teams typically have a few personnel at the arena. The rest of the teams including most of the executives and coaches will instead be running the draft at their own internal facilities offsite (called the “war room”).<sup>F</sup>

Round one to three occurs on day one, and rounds four to seven happens on day two. All selections occur sequentially, from the number one pick in round one to the last pick of round seven. At any one time only one team is “on the clock.”

### ***Picks***

The draft picks are determined in reverse order of team records at the end of the recent season. The team with the worst record (in 2003 it is the Cincinnati Bengals) will have the overall number one pick. The team which won the Super Bowl championship will have the last pick. For the other thirty teams, they are ranked based on several factors:

- 1) Non-playoff teams will have higher picks than playoff teams; those non-playoff teams are then ranked by their records.
- 2) Playoff teams pick in reverse order of their success
- 3) Tie breakers are based on strength of schedule (calculated based on the combined win-loss record of the teams a team played); division and conference records; and coin toss.

### ***Selection***

There is a specific time limit for each pick. Round one picks have 15 minutes each. Round two picks 10 minutes, and the other rounds 5 minutes. A team with

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<sup>E</sup> The only exception seems to apply to the overall #1 pick. In 2003, the Cincinnati Bengals “asked” potential #1 pick Palmer of USC to sign a contract before draft day. Palmer did sign, of course, given there are lots at stake for #1 pick in terms of salaries. Bengals used the strategy of pushing Palmer to sign or else they could pursue another player with their #1 pick.

<sup>F</sup> A “war room” typically has lots of phone lines for talking to the draft arena personnel, and for discussions with players and other teams for trades.

the current pick must submit its selection physically and directly to the NFL commissioner (via the team personnel in the arena, usually taking orders from the “war room”), before its time expires. Otherwise, the team is assumed to pass the pick at its current order and allow teams with consequent picks the option to jump in and submit their choices (likely for the same players) immediately. The team that passed will be allowed to submit anytime to the commissioner for the “next” pick.

### ***Trading***

Teams are allowed to trade their picks anytime during the season up to the expiration time of a specific pick. How the picks are traded is not restricted. Teams frequently trade picks for veteran players and for very complicated multi-team, multi-player, multi-season deals.

Teams are also allowed to trade future draft picks for their deals. A team can trade its 2004 first-round pick, for example, with a receiving team. Because the position of the pick is unknown until the team plays the 2003-2004 season, the receiving team benefits if the pick is much higher (i.e. the origin team plays badly).

### ***Signing of Draftees***

Players are not obligated to sign agreements with the teams that drafted them. However, no other team can pursue these players, for at least a year after the player was drafted. Hence, the players typically will want to come to agreement, instead of risking not having a position at all for a year. The reality is that current NFL salaries are extremely attractive and there are no comparable salaries players can possibly earn with other professions.

There are always more players available than the number of picks. After the draft and for a while during the off-season, teams can use their remaining rookie salary cap pool to pursue other un-drafted college players.

### **Unraveling of Appointment Dates**

The NFL draft market is a decentralized labor market: teams maintain their individual preference lists and draft players independently from each other. The classification of this market is “Stage 2: Uniform Dates Enforced” – due to the fixed draft dates and strict pick ordering. In other words, teams will not compete to sign players earlier than their competition and risk getting incomplete information and hence possible “busts” in their choices – the NFL disables the unraveling issue.

What we are interested in is to figure out what contributed to today’s choice – things must not be working out for teams such that the NFL made the change. To study what contributed to costs of signing players early for teams in the past, we look at a few areas.

## ***Absence of Draft System***

First, a NFL career in the old days, especially before the draft in 1930s, was nowhere near the attractiveness of today's NFL career. The NFL was a mere nine-team league, and attendance was not at all close to today's standard. The football business was simply not very significant. Therefore, salaries for NFL players were not extraordinary – there are many other career options that offer similar salary packages for the players. Hence, it was not uncommon then that players often decided not to play in the NFL even after lengthy negotiation. A prime example occurred during the 1<sup>st</sup> ever NFL draft, Raghib Ismail, projected #1 pick, decided not to join the NFL but instead played in the Canadian league for guaranteed \$18.2MM over four years [Whit92]. Teams were thus competing to get players who would commit to play as early as they could.

## ***College Factors***

There were much fewer players for teams to select from back then. College football was nowhere near today's scale – there were not many football teams in the country. The talent pool was thus made up of many non-college players as well. Hence, the good players were obvious to most teams, which would do anything they can to compete for those talents. That pushed the appointment dates earlier for teams to sign up players – whether college students or not. This resulted in misjudgment in picks, because back then information about players was very limited – teams often relied only on newspaper information and stats and few teams have any scouts.

As colleges' role expanded over the years, the unraveling situation eased. Players had to have college eligibility – they must have played four full football seasons before they were qualified to sign any contracts. This rule initially created lots of chaos due to lack of understanding across the NFL and many teams ended up signing players that they should not have signed as teams rushed to sign young players [Whit92]. Nonetheless, that was temporary and teams made sure that they not draft players too early. Today, the eligibility rule has been relaxed significantly and many underclassmen are able to be drafted by teams without restrictions. However, teams still tend to only prefer drafting players with extensive college experience (mostly seniors and juniors). The reason is that no other games (such as high school ones) would help a team to decide a player is competitive enough.

## ***Competition with other Markets***

The NFL dominates the US market today. However, over the past few decades many competing leagues had come around. They forced the drafting days to be pushed up a lot earlier than they should be, for the better good of all the NFL teams. These leagues included the American Football League (which eventually merged with NFL) and the Canadian Football League. In 1956-59, the NFL drafted early in an attempt to draft and sign players faster than rival leagues. The first four rounds happened in late November, and the other rounds in January.

Another unforeseen competition was the world wars. Many players that teams drafted had to service the country. Therefore, during the wars the draft went for many more rounds (near 20), as teams assumed that they would end up having only half of the draftees to negotiate agreements with.

## **Imbalanced Power**

The NFL draft system is not fair. Teams have all the power. They have their preference list, and the worst teams get to draft the best players. The players have their preferences, but can never exercise their rights due to the rules. Besides, the NFL is so competitive that most players are accustomed to not care about which teams they play. Unlike players in the early days which could earn similar salaries elsewhere, players drafted these days are similar to people who win lotteries – hence they mainly care whether they will play for a team at all.

Because the players are out of the picture in the official rules, all they can do is to use indirect signaling. A player will be more motivated to show the good skills he has to a team that he is interested in. A player may also choose not to attend invited workouts by teams that he is not interested in. Also, some pre-draft top picks try to remain high on teams' preference list by missing league wide workouts so that his weaknesses do not expose and hurt his ratings.

Other than these indirect signaling, players do not have much choice. Because they cannot express interests, blocking pairs do not formed by the NFL rules [Roth90].

## **Timing of Transactions**

An interesting aspect to understand is why the NFL drafts chose the current round and time limit formats – specifically, why do first round picks get fifteen minutes, second round ten minutes, etc.? One question to ask is what the difference would be if the pick time is a lot longer than 15 minutes? For example, what if each pick has an hour, or several hours, or even a day?

The reason these questions are interesting is that, apparently there are teams that may wish the pick time could be longer, if at least for a few minutes. As an example, we choose the Minnesota Vikings.

The Vikings have been a laughing stock of the football world because of its inability to manage its pick time for the recent two drafts. In 2002, the Vikings failed to capitalize on the time expiration of another team. The Vikings had the overall number 7 pick, which is a very high pick. The team before it, Kansas City Chiefs, wanted a player that the Vikings also wanted: Defensive Tackle Ryan Sims from University of North Carolina. Before the draft started, Vikings probably have assumed that they would lose Sims to Kansas City.

Surprisingly, Kansas City, for unknown reasons but probably due to trade talks on the phone, did not submit its draft choice in time after the 15-minute limit was up. Accordingly to the rules, Minnesota now had the option to jump in and submit its choice, which could have been Sims since he was still available. More surprisingly, the Vikings did not do anything! They were idle for at least over 30-40 seconds when it was their turn to steal the pick at number 6. Instead, Kansas City came back to submit its choice before the Vikings and luckily still got Sims at number 6.

Apparently the Vikings did not learn its lesson. In 2003, the Vikings did another move that were embarrassing. They had again the overall number 7 pick and were looking for a player Kevin Williams from Oklahoma State. Believing that they could get Williams at a lower pick, like number 10, they were on the phone trying to trade the pick with teams with picks 8 to 10, to swap picks and also get a lower pick as compensation. Both Jacksonville (#8) and Baltimore (#10) were interested in a quarterback named Bryon Leftwich. In 15 minutes, the Vikings could not close a trade deal and let the clock expired. Then the amazing thing happened – before Vikings pick, all first six teams spent a good portion of the 15 minutes before announcing their choice. When Vikings missed, Jacksonville jumped in and submitted its choice of Leftwich in less than 15 seconds. In less than another 15-20 seconds, #9 pick Carolina jumped in to get its player now at #8. The Vikings could not submit its choice until 40-50 seconds and, despite still getting the player they claimed they wanted in Williams, demonstrated the worst habit of letting a pick expired.

What if these times were changed to longer periods? It would let teams explore the optimal strategy for their pick. However, it is for that same reason that teams probably do not want long time – less-sophisticated teams in terms of trading ability could make many quality trades, so the more sophisticated teams lose their advantages. It is the existence of teams like Minnesota that discourage the league to move to a longer time period – so the Jacksonville's of the world could take advantage of them.

Other apparent reasons for the time limit would be the amount of time teams want to spend on draft – most teams probably enjoy and prefer the high pressure of the “war room” environment over two days, rather than over several weeks. Longer time limit also means that teams will have incentive to discuss and/or visit players when picks are happening to get more information. This may put the higher pick teams in disadvantage.

## **Centralized Market Feasibility**

We see two main problems with the current draft market. First, as discussed before, the draft is very unbalanced that players have no rights to express their preferences. Unfortunately teams do prefer this as they allow the weak teams to compete, perhaps there should not be a change despite its questionable achievements [Sieg95].

The other main problem is the extreme flexibility of trading. Most of the issues with matching and timing have to do with trading. The current trading rules allow teams to trade a draft pick for *anything* – picks in the same draft, in future draft, players on existing rosters, etc. This convenient feature allows teams to fully explore every possible thing that their picks can trade for. The scope, we observe, of a single draft, is thus not limited, and definition of the “market” becomes very unclear.

Even if picks are traded within a draft, there are issues. Use Minnesota again as example. Ideally, Minnesota should use their number 7 pick to choose the players they want at number 7, instead of trying to push it down for additional benefits, such as paying their player lower salary (lower picks get lower salaries). These create the timing problems we discussed.

Our argument is that unless teams in the NFL agree to drop out-of-scope pick trading (in other words, only trading among picks in the same draft is allowed), a centralized market mechanism is not feasible.

To construct a centralized market mechanism, the NFL draft clearinghouse will need to collect preference lists from all of the teams. These preference lists are extremely complicated, as they not only change based on what other teams have selected, but also based on what out-of-scope trades are feasible, at each specific selection time period. At each selection, the league will have to update preferences by requesting new data from the teams. This is one extremely complicated combinatorial auction that has a wide set of goods (e.g. a team that has the #3 pick will have its preference be chosen from a set, based on the players that #1 and #2 pick. There are hundreds of players to consider! For lower number pick this preference will be almost impossible to organize and compute. Also, teams have bundles of players they want: if they get player A they probably want player B, but not one alone, etc. These create another difficulty to even have a reasonable matching language). In addition, there are also privacy issues, as teams’ trading interests could be revealed – teams typically handle their trade talks very carefully to avoid rival teams to know their strategies.

We think that a possible centralized market mechanism may look more like an auction: all players are ranked in order of value, using combined and weighted neutral experts (such as college head coaches) ranking. Each player will be assigned a “currency” value, or points, or how much he is worth. This is the “reserve price” for a player. The best prospects will have the most points.

Assuming no trading is allowed, teams are assigned points based on their previous season records – worse teams have more points to “buy” players.

The mechanism is not one-shot. Instead, it runs  $N$  auctions.  $N$  being the number of ranked players on the lists and have been assigned points (for non-ranked players teams will acquire them through free agency after the draft).

For each auction, a team will submit a sealed bid on their points. We will use a Vickrey auction to get truthful valuations. The highest bid wins drafting the player for an auction.

The problem this scheme solves is to disable the fact that the weakest team get to pick the best players. Instead, we give the weak teams more points so they can buy more players, but allow other teams to make big bets on certain players if they desire to do so (e.g. a team can bid all the points they have on the #1 overall pick).

The auctions can clear rather quickly. We can run an auction every 5 minutes or so, such that teams have times to “calculate” their true values to bid. Points unused by teams at the end of the draft will be forwarded to next year’s draft.

This simplified sequential auction scheme is incentive compatible across auctions, because the goods in the auctions are all distinct (in other words, a team has no reason to pass on an auction hoping to get the “same” good at a lower price in a later auction). The teams will simply bid truthfully on the players that they desire most. Because each team’s preference list does not map the league ranking list, many teams will simply bid low for players that rank higher on the league list. Teams also may not always bid less and less over time. As an example, if team A loses a quarterback at pick number 10 to another team B, team A will have to bid for the next available quarterback. Knowing that they need a quarterback they will likely spend similar points on the next quarterback. The key thing is that whatever they will spend will be truthful.

## Summary

We have provided an overview of how NFL draft works today and in the past. We have looked at rationales of some of today’s rules and what could have made the league to create them. We pointed out that the NFL teams like the current draft because of its inefficiency, and do not care much about what the players think as they have very low negotiation power. We argue that the NFL draft is “stable” and accepted and is not going to change for a long time. Nonetheless, we pointed out a few areas where the draft can improve, and how a centralized mechanism can make the market better. However, those schemes are subject to experiments as we have made very critical assumptions, specifically trading of picks will be limited in scope.

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