Fantasy Football ADP Valuation

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Overview & Objective

This project analyzes Average Draft Position (ADP) data and fantasy football outcomes from past seasons to help managers make smarter draft decisions. The goal is to identify where the market systematically misprices players by round and position, highlight the frequency and impact of undrafted "league winners," and determine the best draft ranges for each position based on their tendencies to over- or under-perform expectations.

Questions

Where does the market systematically misprice players by round and position? What is the frequency of undrafted players becoming potential "league winners"?

Data

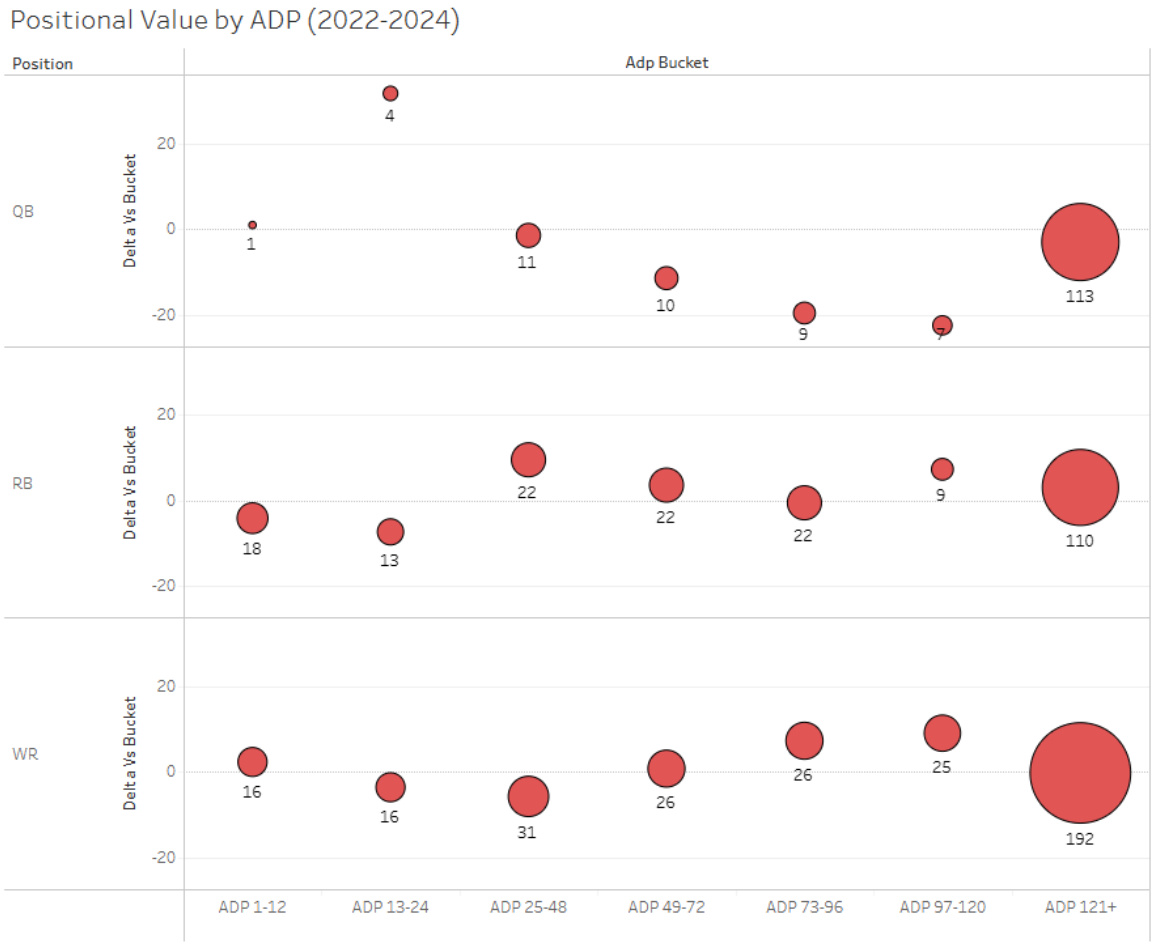
The data gathered is from Fantasypros.com and displays the Average Draft Placement (ADP) of each player at a given position and the overall fantasy output of these players. Data that was irrelevant to the case study was removed as a part of the cleaning process. There were also issues with players with an apostrophe in their name that caused their name to be cut off short. These were all able to be manually fixed due to the datasets relatively small size. The names of the players also came with their team abbreviation in parentheses, which needed to be removed in a new column. Lastly, VLOOKUP was used in order to pull the ADP of each player in their own positional ranking spreadsheets because the stats by position spreadsheets did not include overall ADP.

Once the data made its way into SQL, the data from all nine sheets was aggregated into one new table to make the analysis process easier. In order to answer both questions at hand, two separate queries were used. Once analyzed in SQL, the findings were put into Tableau to get visualizations of these findings.

Analysis/Findings (Question 1)

Looking at mispriced players at different ADPs, over the past 3 years all three positions had some ADP ranges where they were overvalued and other ranges where they were undervalued.

Here is a visualization of the findings:



FantasyPros. *NFL Player Statistics – PPR Scoring (2022–2024, Consensus Rosters)*. Retrieved from https://www.fantasypros.com/nfl/stats/

Starting with Quarterback (QB), it is clear that they are not often drafted within the first 24 draft placements; however, QBs who have been drafted in the 13-24 range have massively outperformed every other bucket over all positions in the entire case study. This means those quarterbacks are heavily undervalued and should be considered at higher draft placements. Looking past the elite range of QBs, it is clear that the Quarterback position continuously slopes down from ADP 25 through 120, with ADPs 49-120 specifically being more overvalued than any other bucket at any given position.

Running backs do not show similar results. There were 18 players with their ADP in 1-12 for RBs in the last three years. The RBs in this ADP along with 13-24 seem to be slightly outperformed by the Wide Receivers. RBs made a dramatic jump in the 25-48 range while WRs went down in that position. After that jump, WRs either were around even or were more undervalued than running backs in all other buckets.

Takeaways (Question 1)

From the findings in the data, a few different conclusions can be made. First off, the Quarterback position is very top heavy, meaning the QBs who are projected to be elite usually overperform

their expectations. QBs who are taken in mid to mid/late rounds have typically proved to be overvalued since 2022. In conclusion, recent data suggests managers should attempt to either pick up an elite QB early or hold off until late in the draft.

Another conclusion that can be made is that in this full Points Per Reception format, WRs are typically outperforming RBs given their draft positions. Based on this recent data, it seems as though the "sweet spot" for getting value out of your RBs is in the middle rounds of the draft whereas WRs should be targeted early.

Lastly, when looking at the very late rounds of the draft, it is clear that all three positions balance out in the same area. RBs slightly hold more value than the other two positions with QB coming in last, but the difference is quite minimal.

Looking forward, the main takeaways when trying to improve draft strategy in a full PPR format would be to target elite QBs in rounds 2-3 (depending on league size), as well as prioritizing elite WRs early while looking to get value at the RB position in the middle of the draft. In the late rounds, the strategy becomes less clear with all positions having seemingly viable options when looking at value. High potential upside players should be targeted in late rounds.

Analysis (Question 2)

Moving to the question about "league winners," here is a visualization of the findings:

FantasyPros. *NFL Player Statistics – PPR Scoring (2022–2024, Consensus Rosters)*. Retrieved from https://www.fantasypros.com/nfl/stats/

Looking at this visualization, the undrafted hit rates vary through all positions. Since 2022, only one QB has finished in the top 12 in fantasy production in their position. Most leagues only

allow one QB to start, so it seems to be very difficult to find “league winner” value in the QB position. This differs for WRs and RBs, who have had four and six undrafted top 30 finishes respectively since 2022.

Takeaways (Question 2)

When trying to implement this data into strategy, it is clear that managers’ priority when looking at the waiver wire should favor skill positional players as opposed to QBs. QBs from the waiver wire should be taken due to injury and in matchup specific cases, but there should be no expectation to find a true “league winner” with an undrafted QB. As for RBs and WRs, the data indicates that there is a much higher chance for a pay off when taking a risk on these positions. However, this risk is still unlikely by examining the odds. Overall, waiver wire pickups do seem much more important at WR and RB positions than at QB, but it still seems highly unlikely to find a true “league winner” every year.

Conclusion

This case study highlighted recent data to show the value at each position for different groups of ADP. It also showed the true significance of undrafted players and the likelihood that they will have a league changing impact. In order to expand on this case study, including tight ends and defenses could pose some value to show how the more overlooked positions could play a role in winning a fantasy football championship.

SQL Code

Question 1:

```
WITH drafted AS (
  SELECT
    Player,
    Position,
    Season_Year,
    ADP,
    FPTS
  FROM Fantasy_Stats.fantasy_seasons
  WHERE ADP IS NOT NULL
),
ranks AS (
  SELECT
  *,
  DENSE_RANK() OVER (PARTITION BY Season_Year, Position ORDER BY ADP ASC, Player) AS
adp_rank_pos,
  DENSE_RANK() OVER (PARTITION BY Season_Year, Position ORDER BY FPTS DESC, Player) AS
finish_rank_pos
  FROM drafted
),
bucketed AS (
  SELECT
    *,
    CASE
      WHEN ADP <= 12  THEN 'ADP 1-12'
      WHEN ADP <= 24  THEN 'ADP 13-24'
      WHEN ADP <= 48  THEN 'ADP 25-48'
      WHEN ADP <= 72  THEN 'ADP 49-72'
      WHEN ADP <= 96  THEN 'ADP 73-96'
      WHEN ADP <= 120 THEN 'ADP 97-120'
      ELSE 'ADP 121+'

    END AS adp_bucket
  FROM ranks
),
bucket_baseline AS (
  SELECT
    Season_Year,
    adp_bucket,
    AVG(adp_rank_pos - finish_rank_pos) AS bucket_avg_surplus,
    STDDEV_SAMP(adp_rank_pos - finish_rank_pos) AS bucket_sd_surplus
  FROM bucketed
```

```sql
  GROUP BY Season_Year, adp_bucket
),
pos_in_bucket AS (
  SELECT
    Season_Year,
    adp_bucket,
    Position,
    AVG(adp_rank_pos - finish_rank_pos) AS pos_avg_surplus,
    COUNT(*) AS n_players
  FROM bucketed
  GROUP BY Season_Year, adp_bucket, Position
)
SELECT
  p.Season_Year,
  p.adp_bucket,
  p.Position,
  p.n_players,
  ROUND(p.pos_avg_surplus, 3)            AS pos_avg_surplus,
  ROUND(b.bucket_avg_surplus, 3)         AS bucket_avg_surplus,
  ROUND(p.pos_avg_surplus - b.bucket_avg_surplus, 3) AS delta_vs_bucket,
  ROUND( (p.pos_avg_surplus - b.bucket_avg_surplus) / NULLIF(b.bucket_sd_surplus,0),
3)
    AS z_vs_bucket
FROM pos_in_bucket p
JOIN bucket_baseline b
  ON b.Season_Year = p.Season_Year AND b.adp_bucket = p.adp_bucket
ORDER BY Season_Year, adp_bucket, Position;
```

Question 2:

```sql
WITH finishes AS (
  SELECT
    Player, Position, Season_Year, ADP,
    COALESCE(FPTS, 0) AS FPTS,
    DENSE_RANK() OVER(
      PARTITION BY Season_Year, Position
      ORDER BY COALESCE(FPTS, 0) DESC, Player
    )
    AS finish_rank_pos
    FROM Fantasy_Stats.fantasy_seasons
    WHERE Player IS NOT NULL
),
top_cut AS (
  SELECT *,
  CASE WHEN Position = 'QB' THEN 12 ELSE 30 END AS cut_pos
  FROM finishes
),
in_top AS (
  SELECT *
  FROM top_cut
  WHERE finish_rank_pos <= cut_pos
)
SELECT
  Season_Year,
  Position,
  COUNT(*) AS total_top_finishers,
  COUNTIF(ADP IS NULL) AS undrafted_top_finishers,
  SAFE_DIVIDE(COUNTIF(ADP IS NULL), COUNT(*)) AS undrafted_share
FROM in_top
GROUP BY Position, Season_Year
ORDER BY Position, Season_Year
```