



The Analytics Behind Winning at Daily Fantasy Sports

February 25, 2014

What is Daily Fantasy Sports?

Daily fantasy sports (DFS) is the **fastest growing** segment of the fantasy sports market.

Players pay to enter contests that **last just one day**. At the end of the day, the games end and the winners are awarded prizes.

Games are **salary cap style**, where each competitor has a capped amount of money they can spend selecting players. Each player's salary is determined by DraftKings and all participants have access to the same player pool.

The screenshot shows the DraftKings website interface. At the top, there's a navigation bar with 'Home', 'The Chase', 'My Account', 'My Contests', and 'Help'. Below this, there are several promotional banners for contests. One banner for 'DAILY FANTASY SPORTS WIN CASH TODAY!' lists: 'CHOOSE A CONTEST', 'DRAFT YOUR TEAM', 'FOLLOW YOUR PLAYERS', and 'WIN CASH'. Another banner for 'DRAFTKINGS PRESENTS CHASE FOR THE CROWN' offers '\$1,000,000 IN GUARANTEED PRIZES!' and '\$250,000 MAIN EVENT \$100,000 TOP PRIZE'. A third banner for '\$15K WEEKLY CONTEST' offers '\$15,000 GUARANTEED' and 'LOCKS IN 137:17:22'. A fourth banner for '\$1,000 NFL FREEROLL' offers 'FREE TO PLAY THIS SUNDAY' and 'LOCKS IN 137:17:22'. Below these banners is a 'CONTEST LOBBY' section with a table of contests.

SPORT	CONTEST	ENTRIES	ENTRY FEE	PRIZE POOL	LIVE IN	DRAFT TEAM
NFL	NFL Early Bird (Thurs) [\$5,000 Guaranteed]	16/555	\$10.00	\$5000.00	72:37:22	DRAFT TEAM
NFL	Week 5 \$50,000 Qualifier (Thurs) [5 Tix Gtd]	1/50	\$11.00	\$500.00	72:37:22	DRAFT TEAM
NFL	\$250,000 Qualifier (Thurs) [5 Tickets Gtd]	1/50	\$22.00	\$1000.00	72:37:22	DRAFT TEAM
NFL	NFL Hall Mary (Thurs) [\$500 Guaranteed]	5/115	\$5.00	\$500.00	72:37:22	DRAFT TEAM
NFL	NFL \$5 Double Up! (Thurs) [\$900 Guaranteed]	9/200	\$5.00	\$900.00	72:37:22	DRAFT TEAM

DraftKings will award over \$200,000,000 in prizes in 2014



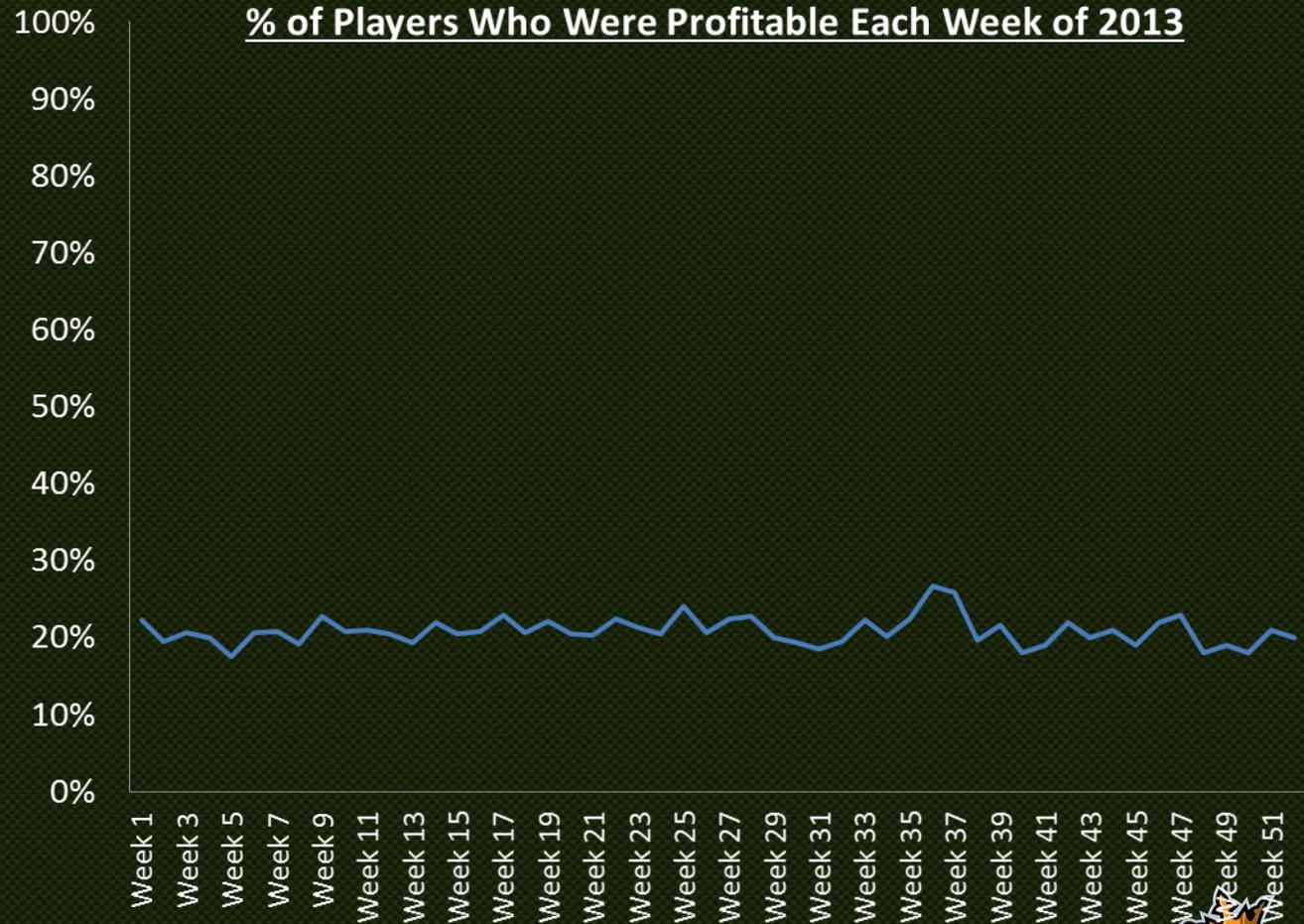
DFS is a game of skill and the best players can create a strong edge

10% of players were profitable in 2013

15% were profitable in the month of January

80% of the profits are made by about 5% of the profitable players

There are around 50-100 people today who play DFS for a living



Winning players virtually all use some type of analysis in selecting their teams

Some Examples

Modeling to project player scores

- Some of the most successful DFS winners have created models to project player scores
- Projected player scores are compared with salaries to identify value in the same way a general manager looks for value in the free agent market

Targeting players involved in late-breaking news

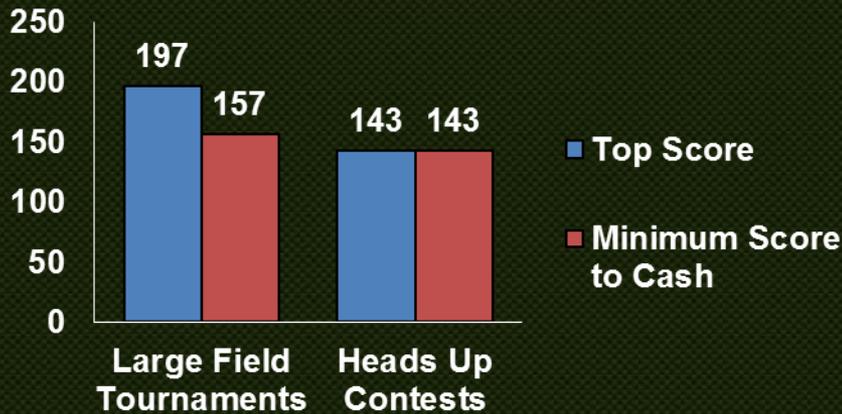
- Because salaries are set for each DraftKings contest before all news comes out, late-breaking news can create meaningful changes in player value, such as a backup Running Back with a low salary who suddenly finds himself starting due to injury
- Many of the best players use Twitter, fantasy sports websites, and other information sources to follow news on injuries, gameplan, weather, etc.

Analyzing matchups to identify expected deviations from the norm

- Determining whether a game will be high scoring or a player will be guarded by a particularly poor defender can significantly boost expected production
- Sometimes secondary impacts can have just as much influence, such as a middle-tier NFL wide receiver who suddenly gets a lot of targets because the team's star wide receiver is facing a shut-down corner

Winning also means selecting teams very differently depending on the type of contest

Fantasy Scores by Contest Format



Two of the most popular contest formats are large field tournaments and heads-up

Large field tournaments have top-heavy payout structures and may have thousands of participants.

Heads up contests are where one player is matched up against a single other player in a winner-take-all.

Game Type	Optimal Strategy	Player Selection Approach
Large field tournaments with top-heavy payouts	Select high variance lineups where maximum potential is favored over expected value	Target players with correlated value, such as the 2/3/4 hitters in an MLB lineup or a QB and his top WR and TE Make contrarian picks – players who will not be popular choices
Heads-up games where you only have to beat one other player	Look to maximize expected value and reduce variance	Reduce correlation where one bad pick does not create multiple underperforming players Do not miss any “must have” players

Q&A