Zero Running Backs or Zero Points:

An analysis on the optimal Fantasy Football draft strategy

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DEFINITIONS

Key terms used

Fantasy football: a game in which the participants serve as owners and general managers of virtual professional American football teams

PPR (points per reception) data for our model

- ADP = average draft position (overall)
- FPT = fantasy points total

BACKGROUND

Millions of people every year struggle with their fantasy football drafts because they often:

- Draft what is computer recommended
- Auto draft
- Draft based on subjective bias like name recognition
- Draft teams with players that are susceptible to injuries during the season

Running backs are the most susceptible players to injury... so is it even worth to draft them early?

Zero Running Back draft strategy is:

- Load up team with the top WRs, TEs, and QBs in the early rounds of the draft
- Let others pick off the 'top' RBs in the first five rounds
- Starting around the 6th round, draft the leftover RBs (usually consisting of high upside players or backups that might play or can be used for trade value)

ESPN Fantasy Football Draft

Sound | Draft Help

DRAFTING IN 02:11

PICK 1	PICK 2	PICK 3	PICK 4	PICK 5	PICK 6	PICK 7	PICK 8	PICK 9	PICK 10	ROUND 2	PICK 11	PICK 12	PICK 13	PICK 14
			AUTO											

Pick Queue

Autopick

RANK	PLAYER

No players in queue

Roster

TEAM

POS	PLAYER	BYE
QB	Empty	-
RB	Empty	-
RB	Empty	-
WR	Empty	-
WR	Empty	-
TE	Empty	-
FLEX	Empty	-
D/ST	Empty	-
K	Empty	-
BE	Empty	-
BE	Empty	-
BE	Empty	-
BE	Empty	-
BE	Empty	-

Roster Limits 0/16 Players

QB 0/4 RB 0/8 WR 0/8 TE 0/3
K 0/3 D/ST 0/3

Your draft is about to start

Your first pick: Round 1, Pick 5

Players | Pick History | Rules

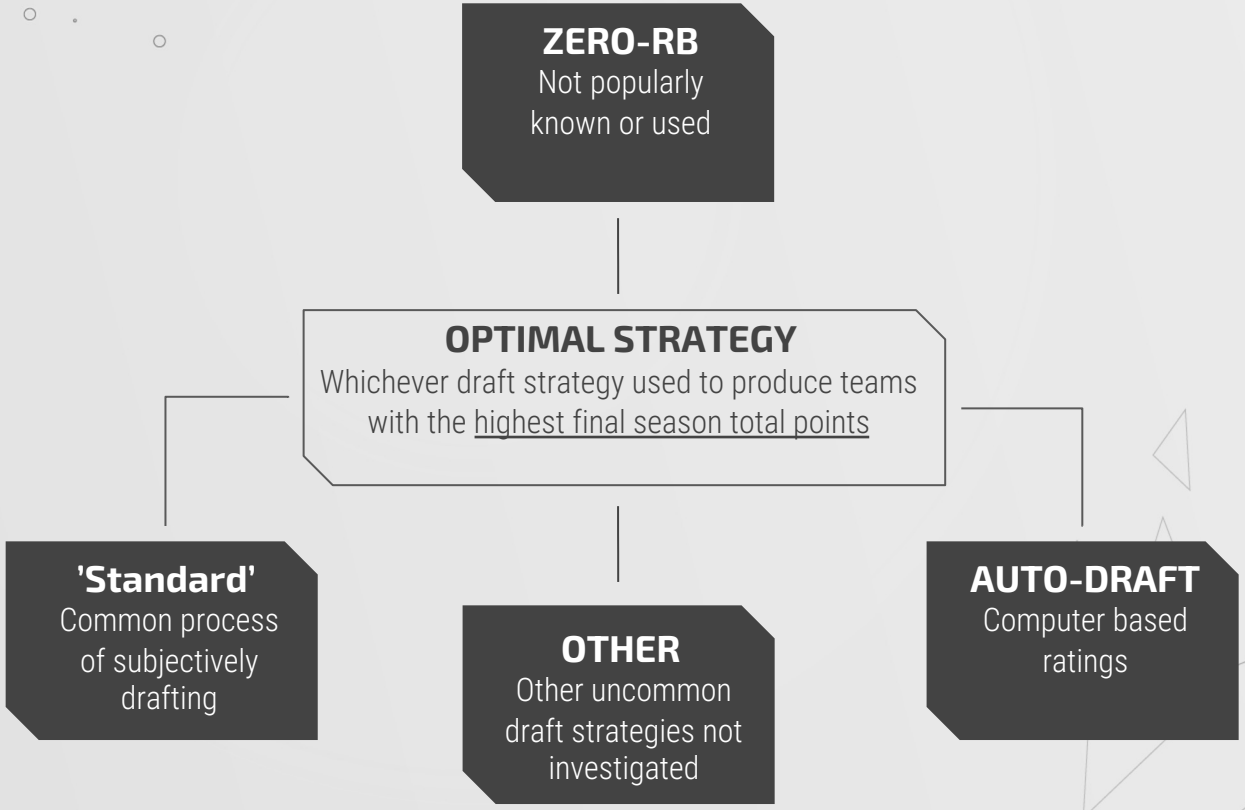
Show Drafted

2021 Projected | All Pos. | All NFL Teams | Player Name

RK	PLAYER		BYE	FPTS	PC	PA	PY	PTD	INT	RA	RY	R
	SF WR											
85	DeVonta Smith Phi WR	QUEUE	14	127.2	0	0	0	0	0	2	13	
86	Tyler Boyd Cin WR	QUEUE	10	122	0	0	0	0	0	4	25	
87	Curtis Samuel Q Wsh WR	QUEUE	9	126.1	0	0	0	0	0	21	117	
88	Mike Williams Q LAC WR	QUEUE	7	127.4	0	0	0	0	0	0	0	
89	Henry Ruggs III LV WR	QUEUE	8	118.7	0	0	0	0	0	13	74	
90	Tom Brady TB QB	QUEUE	9	321.2	389	603	4654	36	11	30	22	
91	Raheem Mostert SF RB	QUEUE	6	132.7	0	0	0	0	0	157	775	
92	Myles Gaskin Mia RB	QUEUE	14	136.5	0	0	0	0	0	158	661	
93	Antonio Brown TB WR	QUEUE	9	113.1	0	0	0	0	0	2	12	
94	Jaylen Waddle Mia WR	QUEUE	14	114.8	0	0	0	0	0	2	12	
95	Jarvis Landry Cle WR	QUEUE	13	123	2	3	17	0	0	5	29	
96	Marvin Jones Jr. Jax WR	QUEUE	7	118.7	0	0	0	0	0	0	0	

Picks

STRATEGIES EXPLAINED:



HYPOTHESIS

The Zero-RB draft strategy will prove to be more effective than the conventional draft strategy.

- Top RBs have been proven to be injured more frequently than other top positional players
- Stacking up on WRs, TEs, and QBs usually scores an equal number of points as the top RBs

GAMES PLAYED FROM 2011-2013

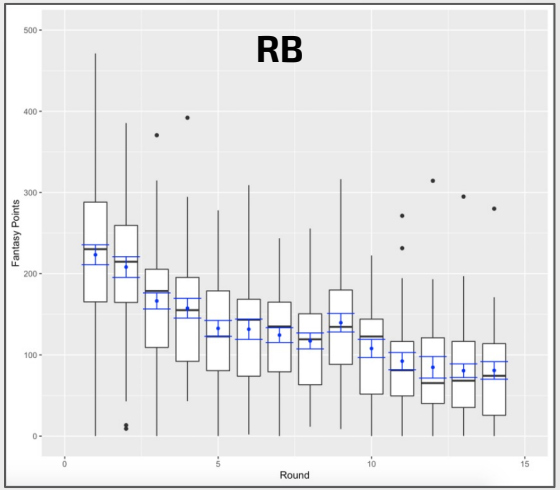
Position	2011	2012	2013
Running Backs	12.97	13.83	13.17
Wide Receivers	14.00	14.57	13.97

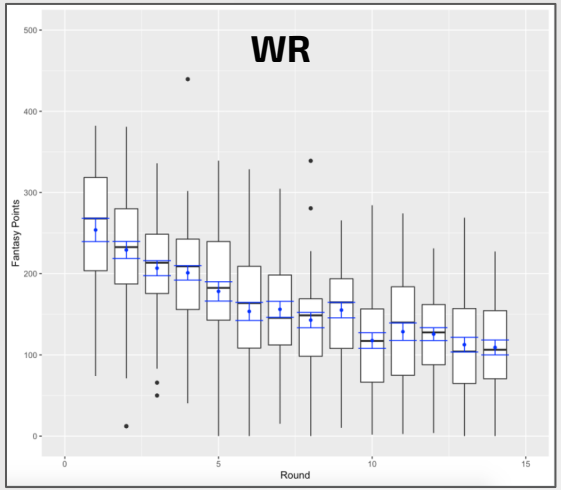
APEX Fantasy Football Insider Blog

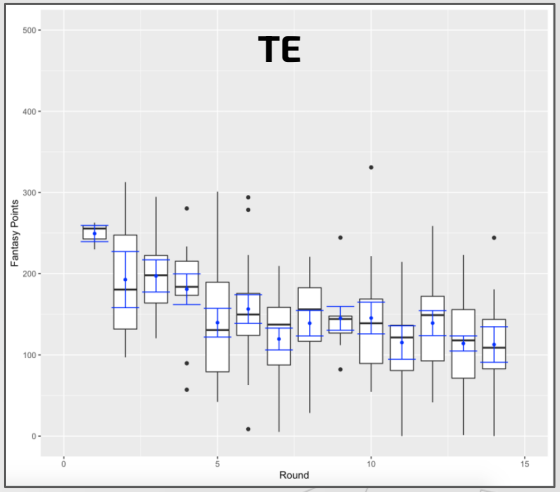
"Our three-year average tells us that a top 30 running back is likely to miss 0.86 more games per season than a top 30 wide receiver."

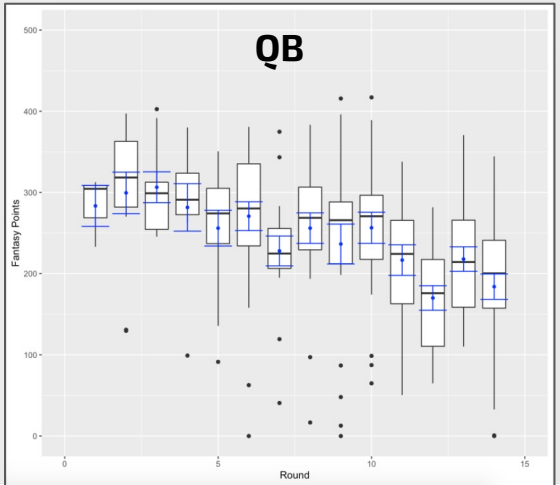
"Considering wide receivers are scoring more points than running backs, come at a cheaper price, and are less likely to get injured, I think it's a very good idea to take wide receivers early. This is the best way to give your fantasy football team a weekly advantage."

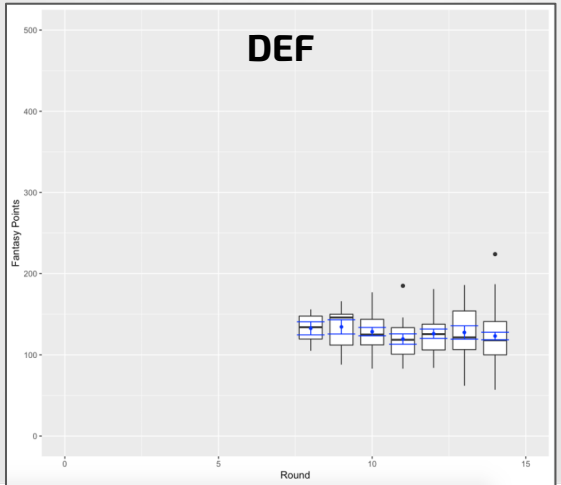
Fantasy points by draft round over different position groups



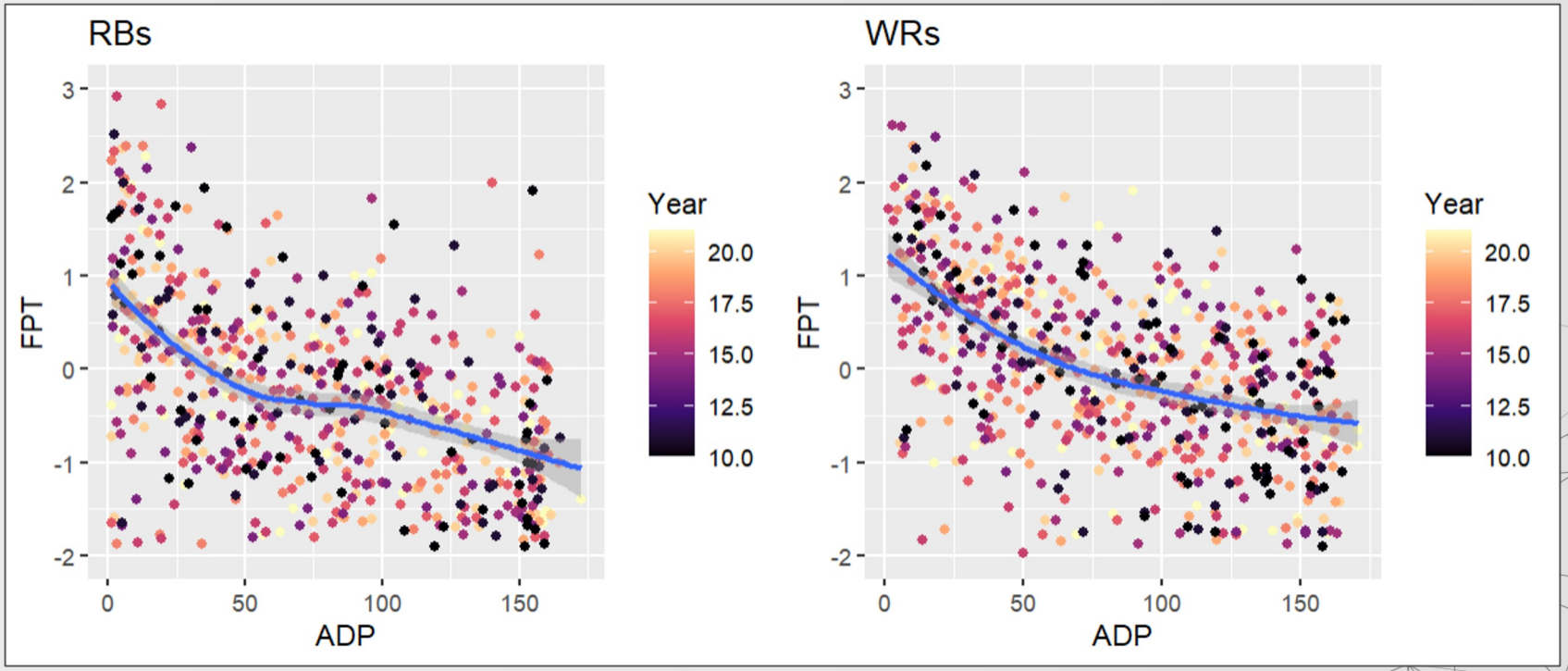








STANDARDIZED FPT BY POS, GROUPED BY YEAR



MODEL PROCESS

1. DATA

The ADP, SD, and average fantasy points tables are combined.

2. SIM

ADP (acting as the mean) and SD are used to generate a random draft position.

3. DRAFT

According to various "limits," all 12 team draft 14 players in a snake draft.

4. SORT

Each team's players are sorted and ranked by POS and Fantasy Points.

5. LOOP

The model is repeated for every position and year.

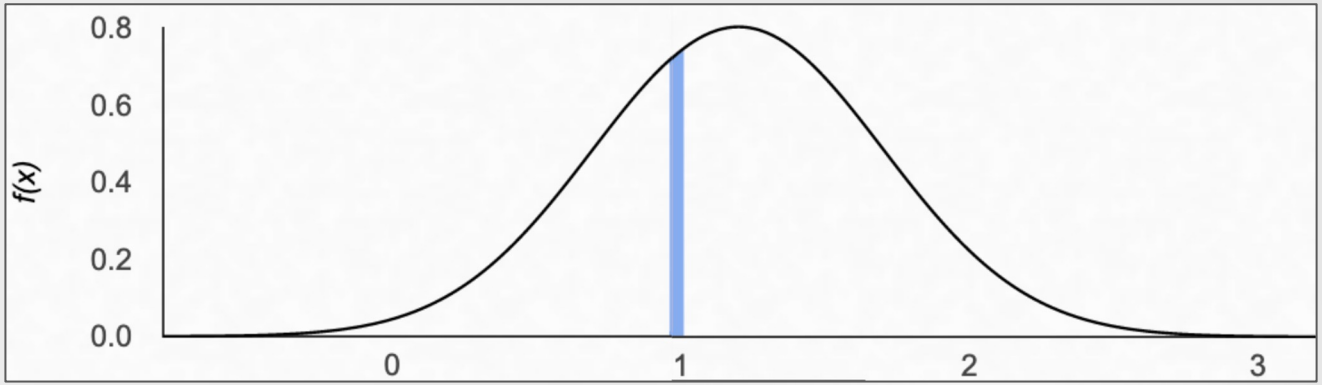
1. DATA

#	Pick	Name	Pos	Team	Overall	Std
1	1.01	Christian McCaffrey	RB	CAR	1.2	0.5
2	1.03	Dalvin Cook	RB	MIN	2.5	0.7
3	1.04	Alvin Kamara	RB	NO	3.8	1.0
4	1.04	Derrick Henry	RB	TEN	4.0	1.3
5	1.05	Ezekiel Elliott	RB	DAL	5.3	1.1
6	1.06	Davante Adams	WR	GB	6.4	1.6
7	1.07	Aaron Jones	RB	GB	7.5	1.7
8	1.08	Travis Kelce	TE	KC	8.2	2.1
9	1.09	Austin Ekeler	RB	LAC	8.5	2.0
10	1.10	Nick Chubb	RB	CLE	9.9	2.2

	Name	Team	Pos	FPG	FPT
1	Cooper Kupp	LAR	WR	25.9	439.50
2	Josh Allen	BUF	QB	23.7	402.58
3	Justin Herbert	LAC	QB	22.4	380.76
4	Tom Brady	TB	QB	22.0	374.74
5	Jonathan Taylor	IND	RB	21.9	373.10
6	Patrick Mahomes	KC	QB	21.3	361.66
7	Davante Adams	GB	WR	21.5	344.30
8	Austin Ekeler	LAC	RB	21.5	343.80
9	Deebo Samuel	SF	WR	21.2	338.96
10	Aaron Rodgers	GB	QB	20.8	333.30

	#	Pick	Name	Pos.x	Team.x	Overall	Std	High	Low	Times Drafted	Name.y	Team.y	Pos.y	FPG	FPT
1	1	1.01	Christian McCaffrey	RB	CAR	1.2	0.5	1.01	1.05	1368	Christian McCaffrey	CAR	RB	18.2	127.50
2	2	1.03	Dalvin Cook	RB	MIN	2.5	0.7	1.01	1.06	1292	Dalvin Cook	MIN	RB	15.9	206.30
3	4	1.04	Derrick Henry	RB	TEN	4.0	1.3	1.01	1.08	460	Derrick Henry	TEN	RB	24.2	193.30
4	3	1.04	Alvin Kamara	RB	NO	3.8	1.0	1.01	1.08	1500	Alvin Kamara	NO	RB	18.1	234.70
5	7	1.07	Aaron Jones	RB	GB	7.5	1.7	1.04	2.01	1257	Aaron Jones	GB	RB	15.3	229.00
6	6	1.06	Davante Adams	WR	GB	6.4	1.6	1.01	1.12	1190	Davante Adams	GB	WR	21.5	344.30
7	5	1.05	Ezekiel Elliott	RB	DAL	5.3	1.1	1.02	1.12	1148	Ezekiel Elliott	DAL	RB	14.8	252.06
8	8	1.08	Travis Kelce	TE	KC	8.2	2.1	1.02	2.03	1052	Travis Kelce	KC	TE	16.4	262.80
9	11	1.11	Tyreek Hill	WR	KC	10.6	2.2	1.01	2.04	1323	Tyreek Hill	KC	WR	17.4	296.50
10	9	1.09	Austin Ekeler	RB	LAC	8.5	2.0	1.02	2.04	1363	Austin Ekeler	LAC	RB	21.5	343.80

2. SIMULATION



rnorm(n, mean, sd)

	#	Pick	Name	Pos.x	Team.x	Overall	Std	Draft
1	1	1.01	Christian McCaffrey	RB	CAR	1.2	0.5	0.9900302
2	2	1.03	Dalvin Cook	RB	MIN	2.5	0.7	2.5419641
3	4	1.04	Derrick Henry	RB	TEN	4.0	1.3	4.8163029
4	3	1.04	Alvin Kamara	RB	NO	3.8	1.0	5.9366280
5	7	1.07	Aaron Jones	RB	GB	7.5	1.7	6.0107805
6	6	1.06	Davante Adams	WR	GB	6.4	1.6	6.8870546
7	5	1.05	Ezekiel Elliott	RB	DAL	5.3	1.1	7.7314197
8	8	1.08	Travis Kelce	TE	KC	8.2	2.1	8.7742517
9	11	1.11	Tyreek Hill	WR	KC	10.6	2.2	8.8381887
10	9	1.09	Austin Ekeler	RB	LAC	8.5	2.0	8.8440596

3. DRAFT

	Team	Name	Pos	Round	FPT
1	1	Davante Adams	WR	1	344.30
2	2	Christian McCaffrey	RB	1	127.50
3	3	Dalvin Cook	RB	1	206.30
4	4	Derrick Henry	RB	1	193.30
5	5	Alvin Kamara	RB	1	234.70
6	6	Aaron Jones	RB	1	229.00
7	7	Ezekiel Elliott	RB	1	252.06
8	8	Travis Kelce	TE	1	262.80
9	9	Tyreek Hill	WR	1	296.50
10	10	Austin Ekeler	RB	1	343.80
11	11	Jonathan Taylor	RB	1	373.10
12	12	Stefon Diggs	WR	1	285.50
13	12	Nick Chubb	RB	2	215.30
14	11	Antonio Gibson	RB	2	229.10
15	10	Najee Harris	RB	2	300.70
16	9	Saquon Barkley	RB	2	148.60
17	8	Calvin Ridley	WR	2	71.10
18	7	DeAndre Hopkins	WR	2	147.20
19	6	Darren Waller	TE	2	133.50
20	5	D.K. Metcalf	WR	2	244.30
21	4	Clyde Edwards-Helaire	RB	2	117.60
22	3	Justin Jefferson	WR	2	330.40
23	2	Joe Mixon	RB	2	287.90
24	1	George Kittle	TE	2	198.00

Round	QB	RB	WR	TE	DEF
1	**1**	**3**	**3**	**1**	**1**
2	1	3	3	1	1
3	1	3	3	1	1
4	1	3	3	1	1
5	1	3	3	1	1
6	1	3	3	1	1
7	1	3	3	1	1
8	1	3	3	1	1
9	**2**	**6**	**6**	**2**	**1**
10	2	6	6	2	1
11	2	6	6	2	1
12	2	6	6	2	1
13	2	6	6	2	1
14	2	6	6	2	**1**

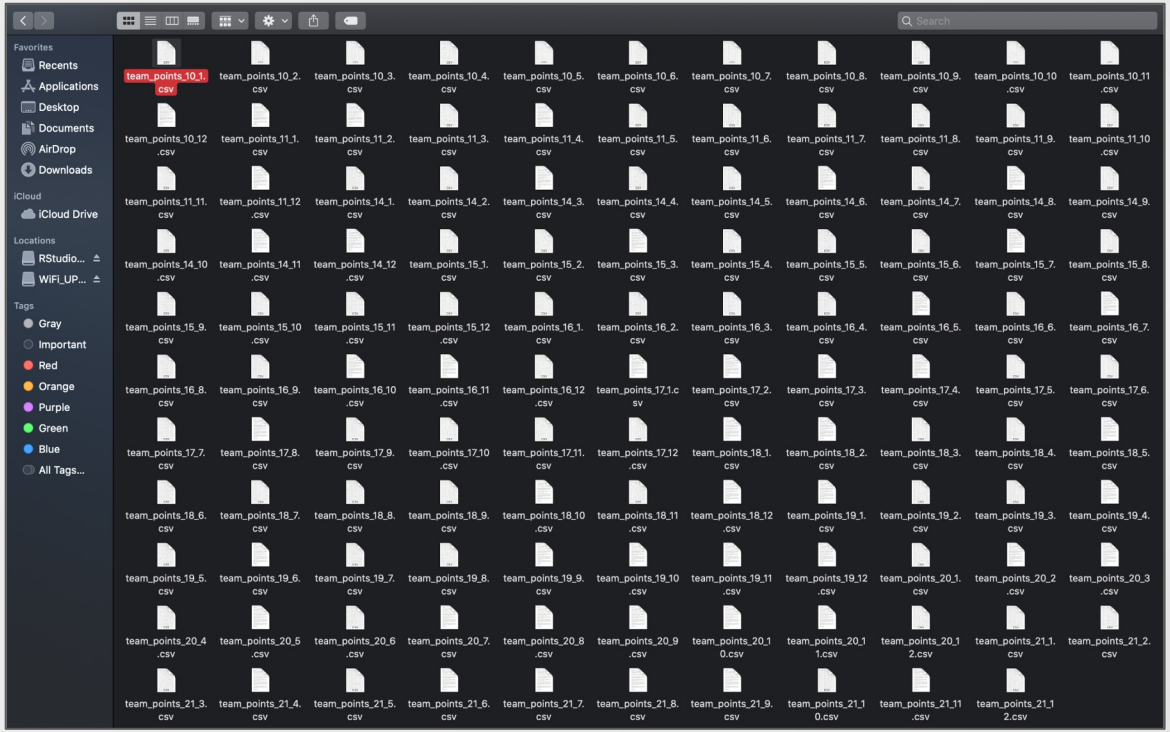
Round	QB	RB	WR	TE	DEF
1	0	0	**1**	**1**	0
2	0	0	1	1	0
3	0	0	**2**	1	0
4	**1**	0	2	1	0
5	1	0	**3**	1	0
6	1	**3**	**4**	1	0
7	1	3	4	1	0
8	1	3	4	1	0
9	1	3	4	1	0
10	**2**	3	4	**2**	0
11	2	3	4	2	0
12	2	**6**	**6**	2	**1**
13	2	6	6	2	1
14	2	6	6	2	**1**

4. SORT

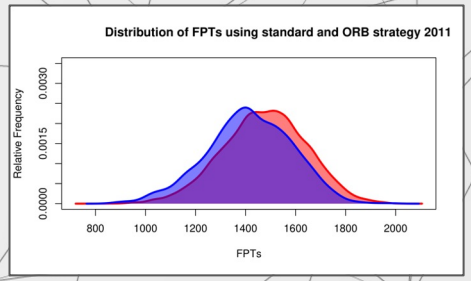
	Team	Name	Pos	Round	FPT
1	1	Davante Adams	WR	1	344.30
2	1	A.J. Brown	WR	3	180.90
3	1	Julio Jones	WR	5	80.40
4	1	Ja'Marr Chase	WR	7	304.60
5	1	Curtis Samuel	WR	13	3.80
6	1	George Kittle	TE	2	198.00
7	1	Jonnu Smith	TE	11	67.40
8	1	Trey Sermon	RB	6	25.30
9	1	Zack Moss	RB	8	105.20
10	1	Jamaal Williams	RB	9	119.80
11	1	Rashaad Penny	RB	12	121.70
12	1	Lamar Jackson	QB	4	239.98
13	1	Joe Burrow	QB	10	314.24
14	1	Miami Defense	DEF	14	155.00

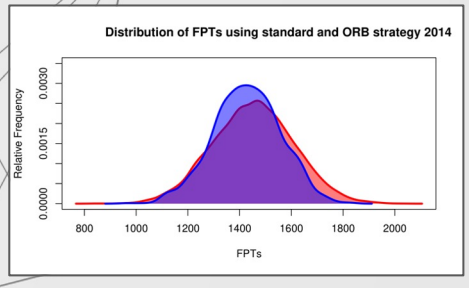
FPT	POS
239.98	QB
344.30	WR
304.60	WR
121.70	RB
119.80	RB
198.00	TE
155.00	DEF

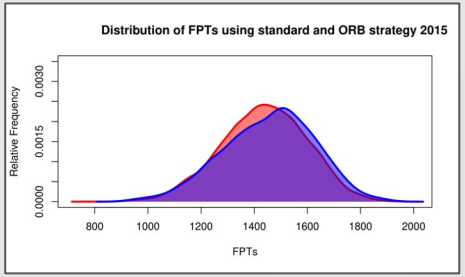
5. LOOP

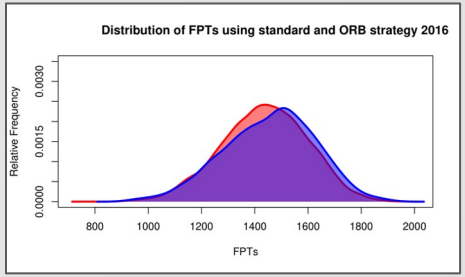


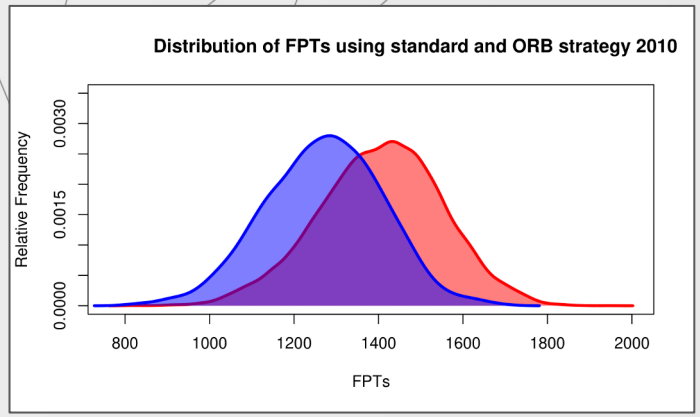
12 Picks
14 Rounds
100 Simulations
12 Experiments
10 Years
= 2,016,000 Picks

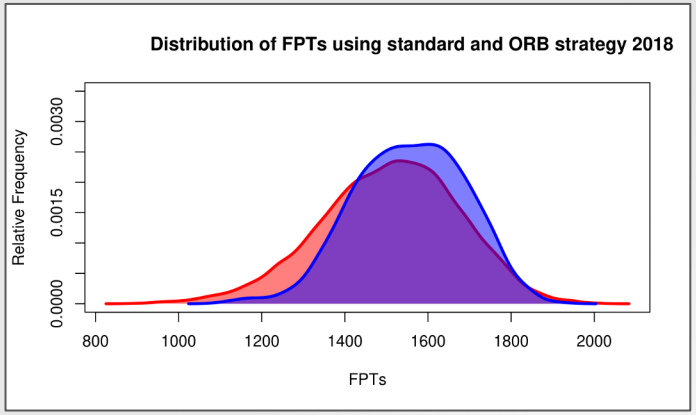






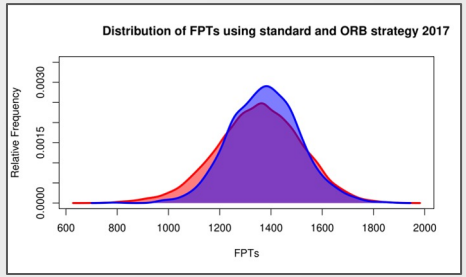


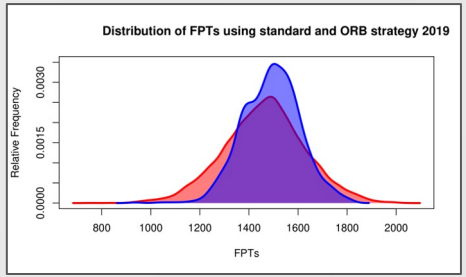


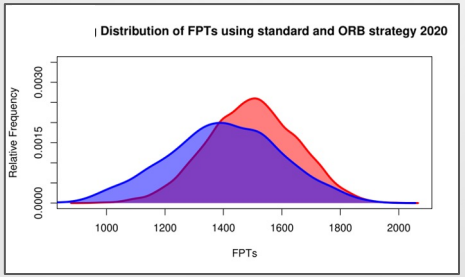


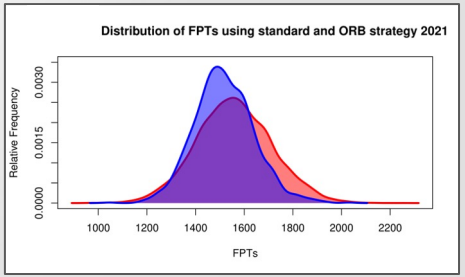
: Standard strategy

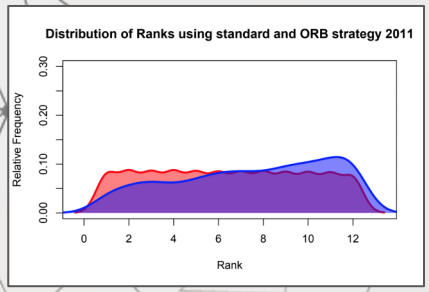
: Zero-RB

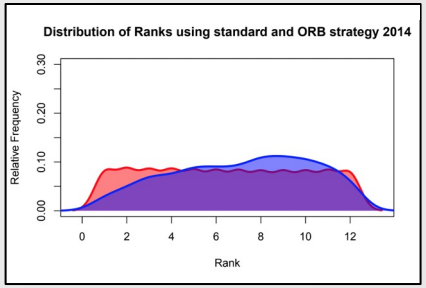


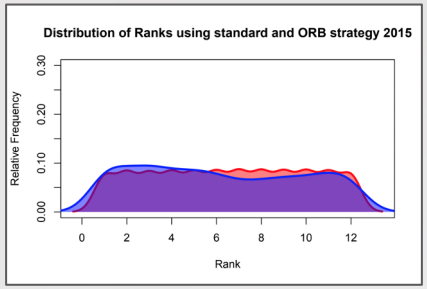


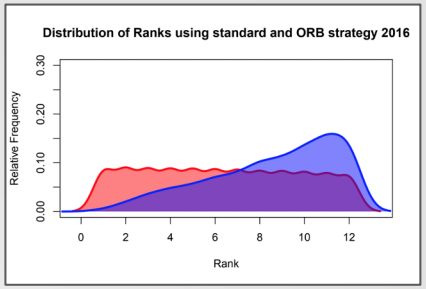


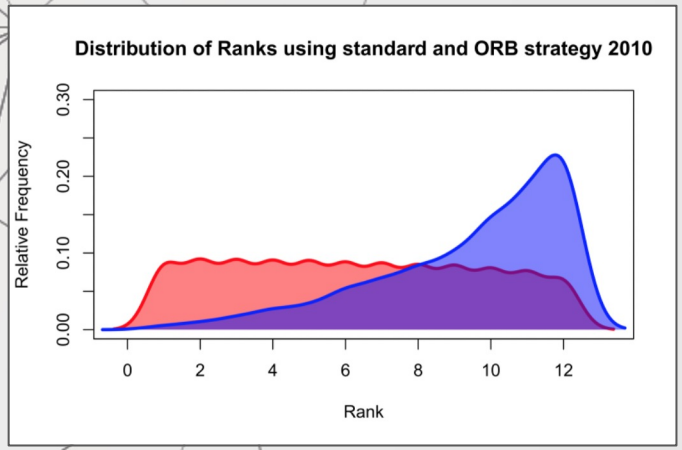


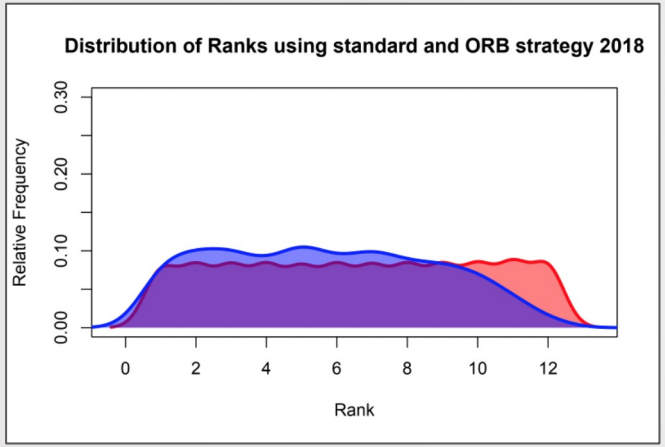












: Standard strategy

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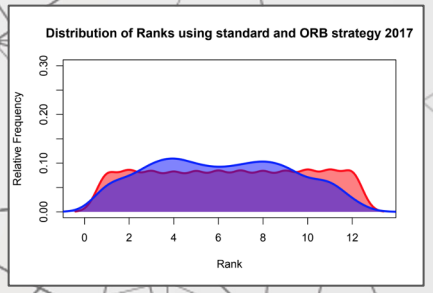
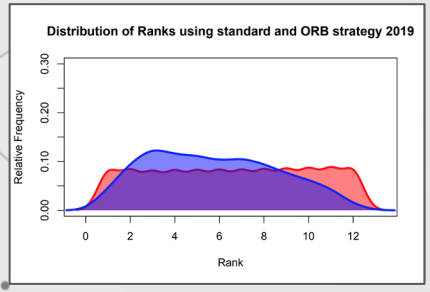
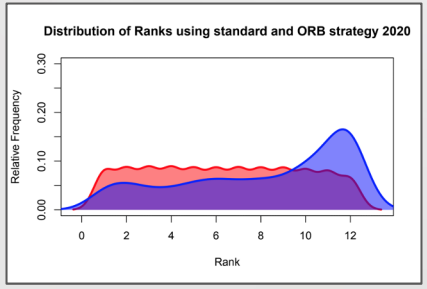
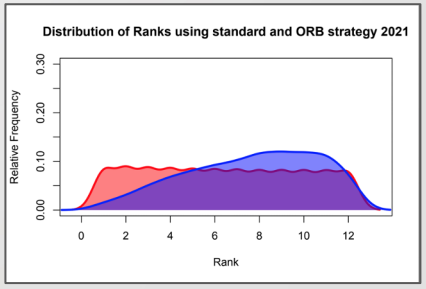
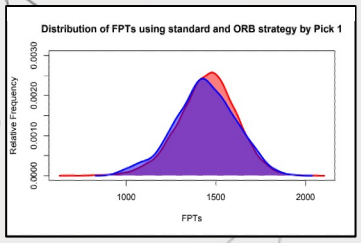
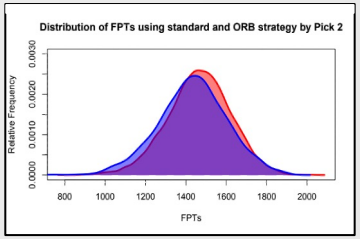


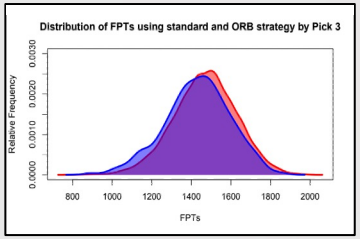


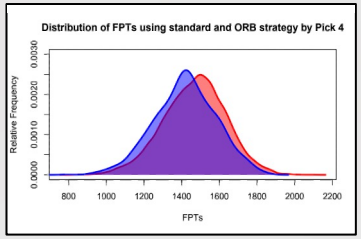


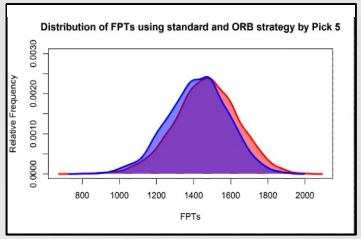


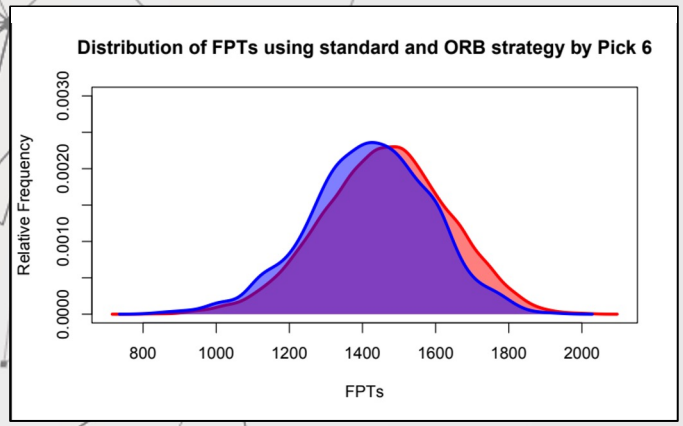


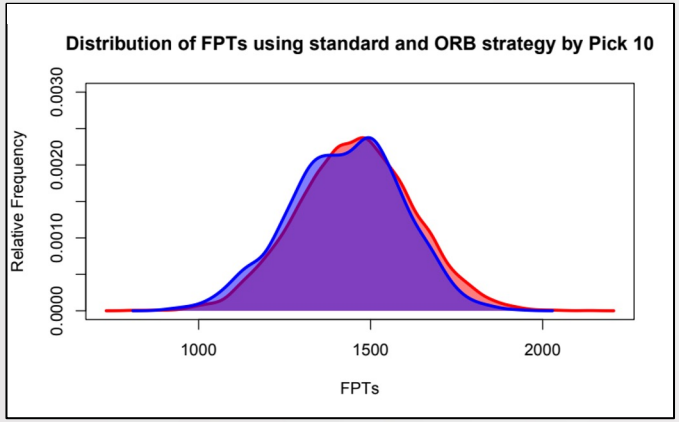






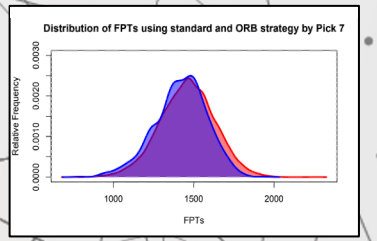


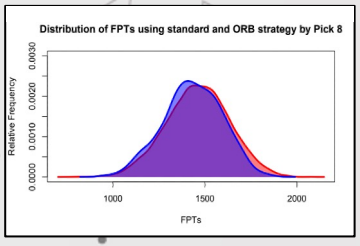


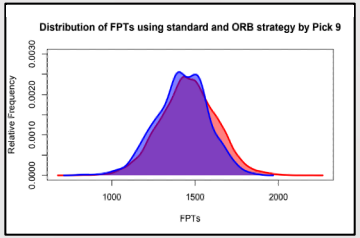


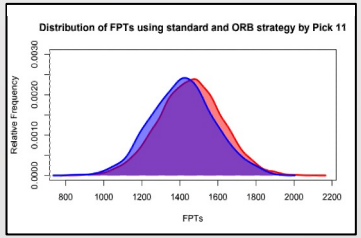
: Standard strategy

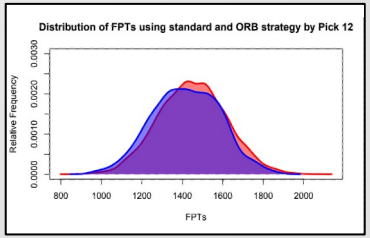
: Zero-RB











CONCLUSIONS

From our data, the **Zero - RB doesn't work optimally** and it is suggested that the Fantasy Football draft process is based primarily on luck

- Year to year distribution of the running backs determines which draft strategy will be the most viable
- Larger discrepancies between top RBs and lesser RBs effect the Zero-RB draft strategy effectiveness
- Random year to year variation in player productivity changes outcomes

LIMITATIONS & FAULTS

- Excluded years 2012 and 2013 due to a lack of data for player ADPs
- Used Occam's razor for draft with assigning normal curves to players
- Elimination of positions in real life leagues like kickers
- Did not have real life data from Sleeper, ESPN, etc to ensure normality in ADP distribution
- Trades and FAAB/Waiver Wire not accounted for
- Data was converted to a .csv and cleaned by hand so room for data errors

References & Resources

https://apexfantasyleagues.com/more-injury-prone-wide-receivers-running-backs/

https://fantasydata.com/nfl/fantasy-football-leaders?season=2020&seasontype=1&scope=1&subscope=1&scoringsystem=2&startweek=1&endweek=1&aggregatescope=1&range=1

https://fantasyfootballcalculator.com/adp/ppr/12-team/all