NFL COMBINE PLAYER DATA ANALYSIS

MOTIVATION

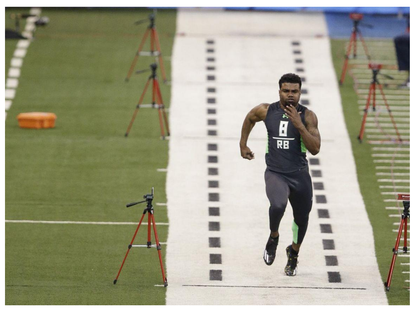
The NFL Combine is an event for player's to showcase their athletic ability. It is divided into several events, including but not limited to the bench press, 40 yard dash, 3 cone, broad jump, vertical jump and more. It is one of the tools professional football teams use to determine whether a player fits certain needs at a position. These needs can range from needing a more athletic quarterback to needing a strong, yet fast past rusher.

At the end of the day teams are trying to achieve one goal at the annual draft: successfully draft as many players that will make a lasting impact on the team as possible. However, two questions arise when using the combine as a measuring stick for impact. One, when should a player be drafted to maximize usage of draft picks, and two, how successful will this player be in the NFL?

In this analysis, we aim to see if we can use the combine to answer that question. Namely, we want to see if some, if not all combine events can determine success at the professional level for incoming rookies and/or if the combine has a significant impact on when a player gets drafted.

TOOLS

The main tool for statistical analysis was multiple regression via the usage of **StatsModel's Ordinary Least Squares** package.



DATA

Since the full datasets about combine results and draft results are considered valuable and worthy of being sold, the data was scraped from several websites. The combine results were scraped from nflcombineresults.com. Both the draft position data and the data regarding games started were taken from pro-football-reference.com. The college ranking data was scraped from statssen.com.

The data includes all events of the combine minus the 60 yard shuttle. For any missing information for a player, it was decided that the mean of the player's position for that event in that year would be used.

Year	Name	College	POS	Height	Weight	Hand Size	Arm Length	Yard	Bench Pre	Vert Leap	Broad Jum	Shuttle	3 Cone	G	GS
2013	Aaron Hes	UCLA	CB	74	198	10.38	32.48	4.62		29	112	4.33	7.26	0	0
2013	Aaron Me	Elon	WR	75	217	9.58	33.18	4.54	9	33.5	123	4.41	7.11	0	0
2013	Ace Sande	South Car	WR	67	173	8.78	29.48	4.58	7	32	117	4.37	6.81	13.5	2
2013	Adrian Bu	Louisville	CB	69	186	9.25	32.08	4.58	17	33	116	4.25	6.92	0	0
2013	Akeem Sp	Illinois	DT	73	307	10	33.48	5.15	37	30	107	4.72	7.82	13.55932	8.135593
2013	Alan Bonr	Jacksonvil	WR	70	193	9.38	30.28	4.59	14	33	117	4.15		0	0
2013	Alec Lemc	Syracuse	WR	73	202	8.48	31.18	4.59	7	32	112	4.29	7.04	0	0
2013	Alec Ogle	Georgia	OLB	75	242	10	33.48	4.7	20	33.5	122	4.39	7.16	12.47458	12.47458
2013	Armonty E	East Centr	DE	76	263	9.75	35.68	4.86		31.5	118	5	7.32	9.491525	1.084746
2013	B.W. Web	William &	CB	70	184	9.38	30.28	4.51	14	40.5	132	3.84	6.82	11.66102	1.627119
2013	Barkevious	Louisiana	OLB	76	241	9.63	33.68	4.58		37	128	4.39	6.84	15.18644	4.610169
2013	Bennie Lo	LSU	DT	74	309	10.25	34.08	5.08	30	25	104	4.67	7.53	14.37288	12.20339
2013	Bjoern We	Florida St	DE	75	266	9.63	33.28	4.83	25	31	111	4.4	7.3	12.66667	5.333333
2013	Blidi Wre	Connectic	CB	73	195	8.63	32.08	4.53	14	36	128	4.12	6.97	11.33333	4.666667
2013	Brad Sore	Southern	QB	77	229	9.28	32.25	4.97		29	112	4.55	7.17	0	0
2013	Braden Br	BYU	OT	77	310	10.25	34.28	5.2	26	28	100	4.7	7.43	0	0
2013	Bradley M	Kansas	FS	73	215	9.13	32.48	4.74	19	34.5	122	4.44	7.07	12.20339	8.135593

CONCLUSION

After running the OLS multiple regression on the combine data, we found that combine results are bad predictors of both draft position and NFL success. It is interesting to note, how much weight the media and sports analyst put on the combine because our results show that there is little correlation to not only draft position but NFL success as well.

We found that the combine is especially bad for predicting the draft position of quarterback, fullback, and strong safety. The combine is a decent predictor for draft position of cornerback, which makes sense because athletic ability is very important to the role of a cornerback in a standard NFL defense. These are as per the R-squared. However, the errors are widely distributed, so therefore we cannot say that the combine is a great predictor of draft pick for any position.

We found that for NFL success all positions were predicted poorly due to the low R-squared in the data. Similar to the draft position results, the errors are also sparsely distributed.

RESULTS

OLS ERROR OUTPUT