

# Regression Discontinuities in the NFL Draft



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# INTRODUCTION

- NFL Draft happens every year in the spring and has 7 rounds of picks for the 32 teams
- Would expect the talent decrease in picks to be mostly linear
- Discontinuities occur based on round implying that GM's and Coaches make decisions not only on talent but by which round you were selected

# DATA

- ▣ Collected from [pro-football-reference.com](http://pro-football-reference.com)
- ▣ Dataset includes draft data from 1994-2006
- ▣ There are 3247 observations across the 13 years



### Summary Stats NFL Draft 1994-2006

rd	Mean Seasons Started	Mean Games Played	Mean Career AV	Mean Probowls	Mean Career Length
1	6.2747525	120.12624	47.099010	1.5321782	8.1831683
2	4.0242718	96.61408	29.364078	0.4781553	6.6043689
3	2.4489796	72.80726	18.827664	0.2925170	5.3673469
4	1.8577681	64.41138	15.094092	0.1312910	4.6564551
5	1.2676991	48.85177	10.484513	0.1438053	3.6769912
6	1.0040404	40.55758	7.773737	0.1171717	0.8868687
7	0.7969283	32.68259	6.494880	0.0426621	0.7064846

# EMPIRICAL METHODOLOGY

- Regression Discontinuity

- $y = \beta_0 + \beta_1 \text{PickNumber} + \beta_2 R2 + \beta_3 R3 + \beta_4 R4 + \beta_5 R5 + \beta_6 R6 + \beta_7 R7$

- Ran the regression with 5 separate dependent variables

- Season Started, Games Played, Career AV, Pro Bowl, and Career Length



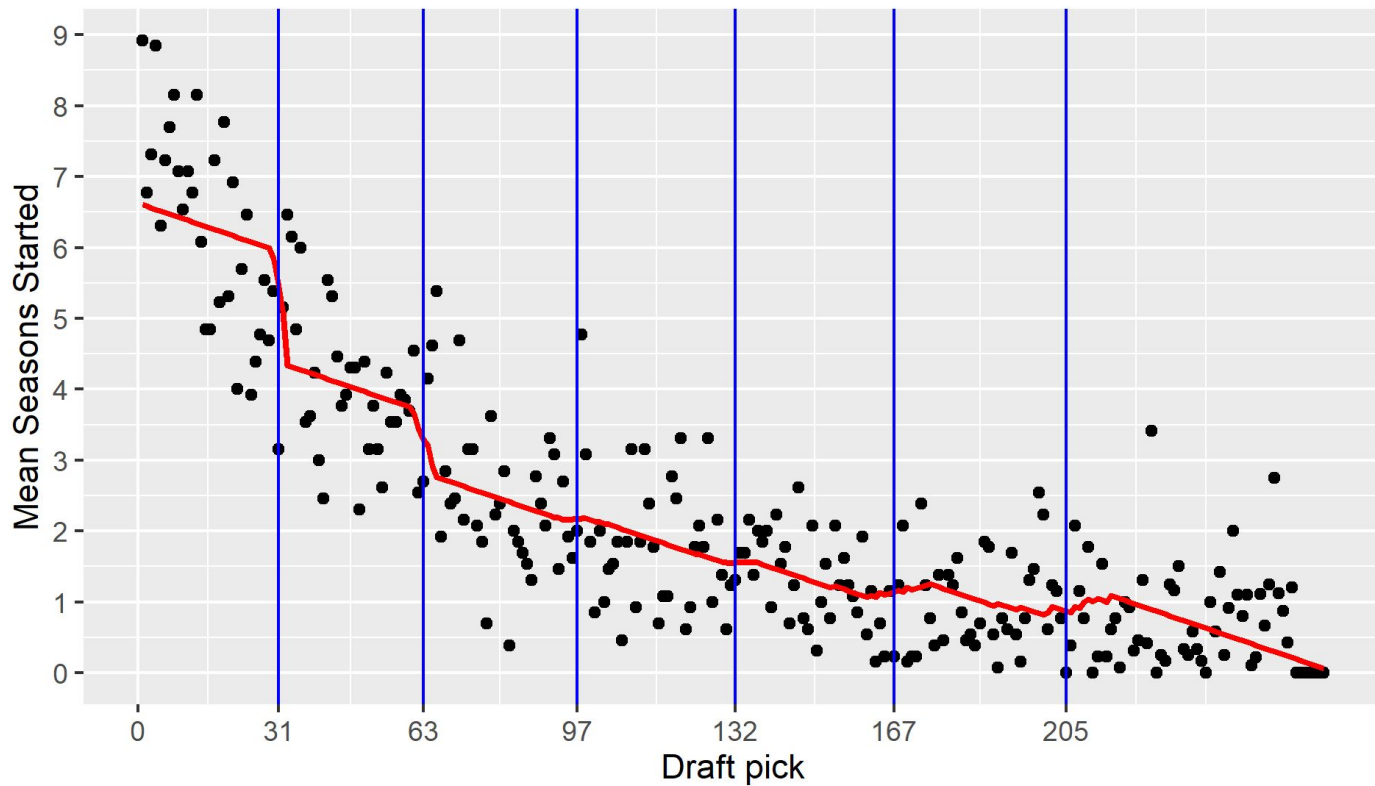
## Regression Results

	<i>Dependent variable:</i>				
	Games Played (1)	Career AV (2)	Seasons Started (3)	Probowls (4)	Career Length (5)
Draft Pick	-0.357*** (0.079)	-0.170*** (0.031)	-0.022*** (0.005)	-0.008*** (0.002)	-0.026*** (0.005)
Round 2	-12.298*** (4.443)	-12.385*** (1.743)	-1.565*** (0.253)	-0.812*** (0.104)	-0.765*** (0.269)
Round 3	-24.369*** (6.256)	-17.322*** (2.454)	-2.423*** (0.356)	-0.744*** (0.146)	-1.150*** (0.379)
Round 4	-20.441** (8.627)	-15.177*** (3.384)	-2.262*** (0.491)	-0.639*** (0.201)	-0.967* (0.523)
Round 5	-23.422** (11.235)	-13.785*** (4.407)	-2.083*** (0.639)	-0.355 (0.262)	-1.034 (0.681)
Round 6	-18.715 (13.987)	-10.294* (5.487)	-1.552* (0.795)	-0.101 (0.326)	-2.880*** (0.848)
Round 7	-11.623 (17.204)	-4.432 (6.749)	-0.845 (0.978)	0.148 (0.401)	-1.975* (1.043)
Constant	125.861*** (2.907)	49.835*** (1.140)	6.625*** (0.165)	1.656*** (0.068)	8.599*** (0.176)
Observations	3,247	3,247	3,247	3,247	3,247
Adjusted R <sup>2</sup>	0.234	0.291	0.266	0.128	0.404

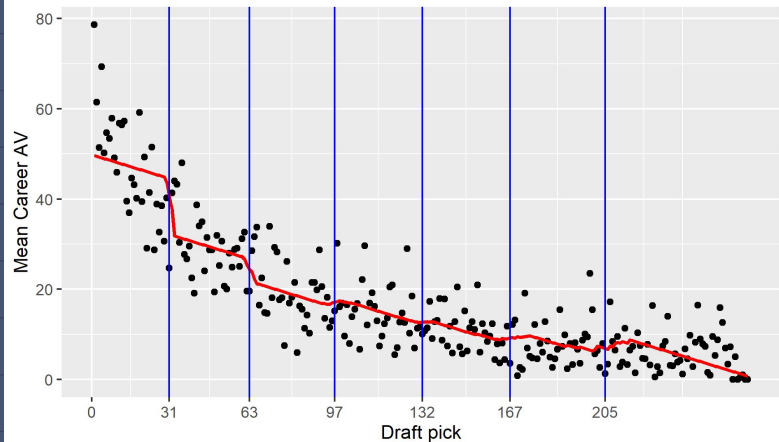
Note:

$p < 0.1$ ;  $p < 0.05$ ;  $p < 0.01$

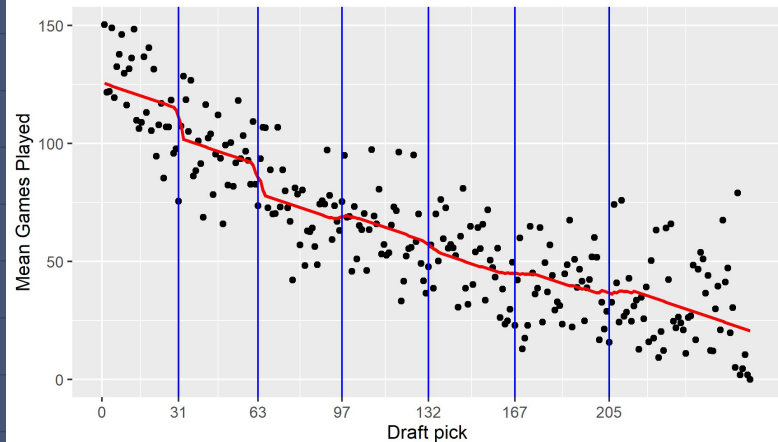
Mean Seasons Started by Draft Pick



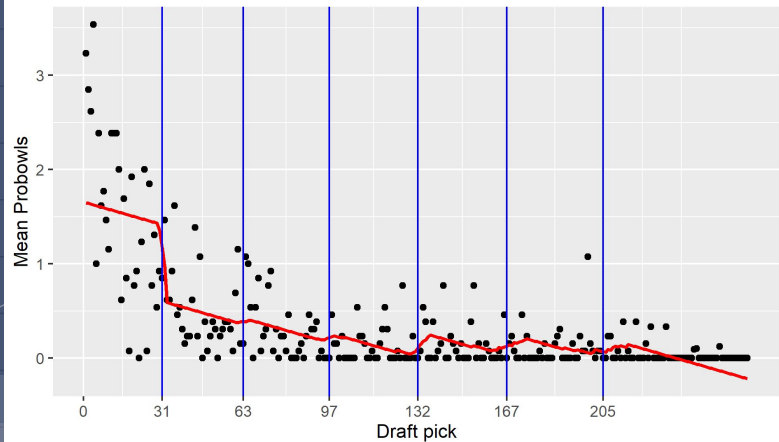
Mean Career AV by Draft Pick



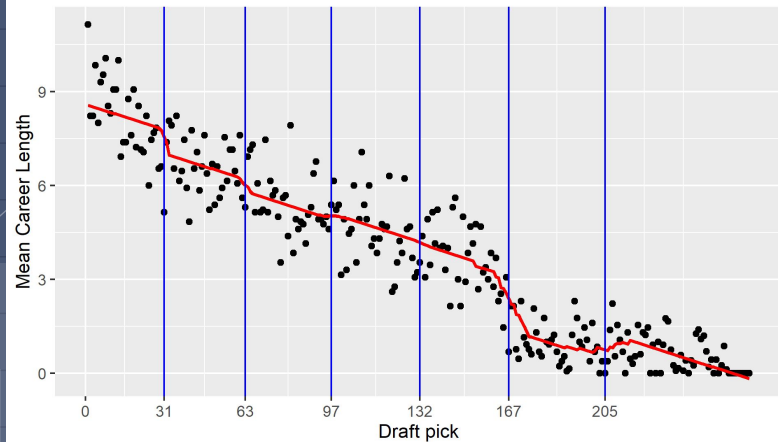
Mean Games Played by Draft Pick



Mean Probowls by Draft Pick



Mean Career Length by Draft Pick





# CONCLUSION

- ▣ NFL GMs make decisions based partially upon sunk costs.
- ▣ Discontinuities only occur for the first two round changes as investment and risk flattens out

