
Wage Discrimination amongst NFL Athletes



Econ 2327

By: Patrick Gill, Ryan Williams, George Ulloa

The Question:

Is there a difference in pay amongst black and white NFL athletes?

- Do white athletes tend to be paid more?
 - Do black athletes tend to be paid more?
 - What factors lead to higher pay? Is race a factor?
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Hypothesis:

-If salaries paid to black and white NFL players of the same position with similar career statistics vary, then race is a factor of determining what a player is paid.

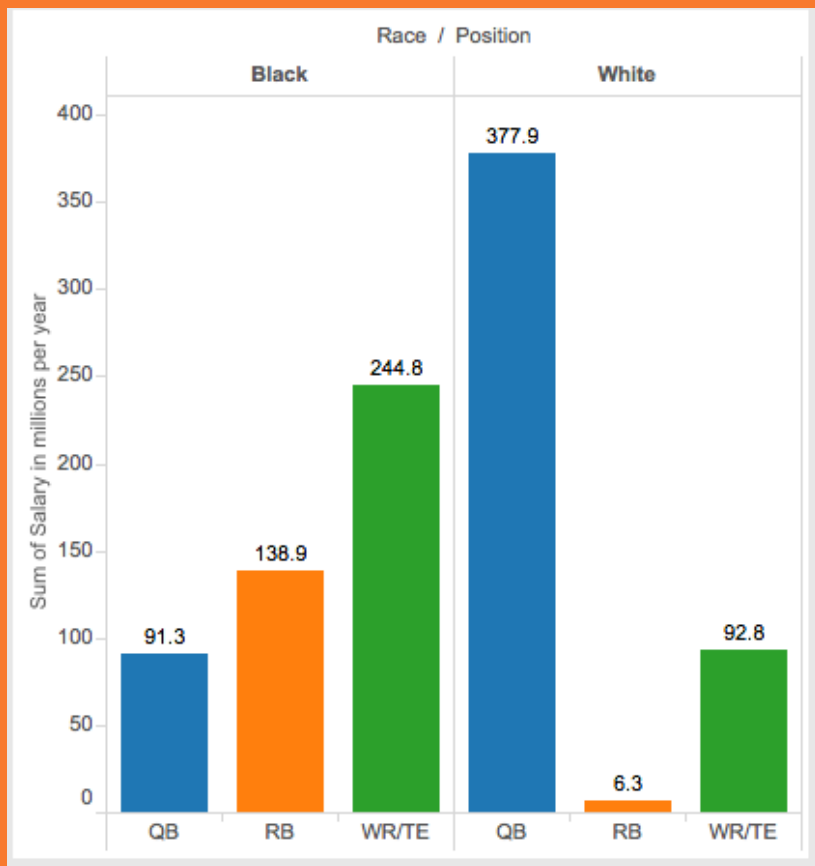
The Data:

- Naturally, different positions will require more or less athletes for that position, thus affecting the salaries of those positions.
- Our dataset broken down by position
 - QB: 40 observations
 - WR/TE: 50 observations
 - RB: 40 observations

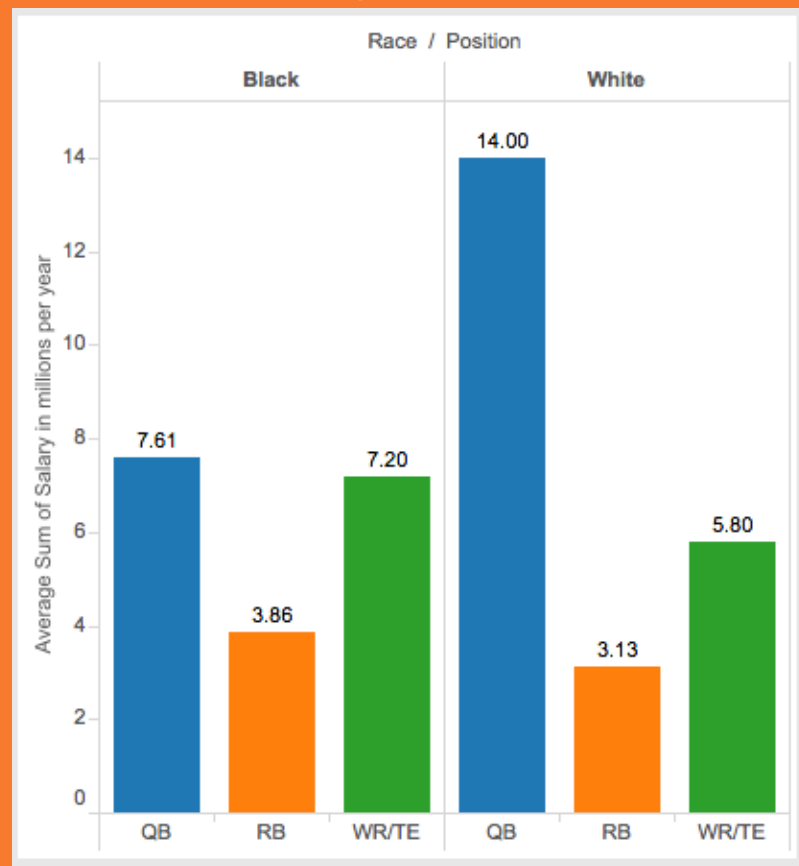
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- All data is based on career stats of each player, and

Visualizing the Data:

Total Sum of Salaries



Average Annual Salaries



- Eric Decker (White) and Julio Jones (Black) have similar career production

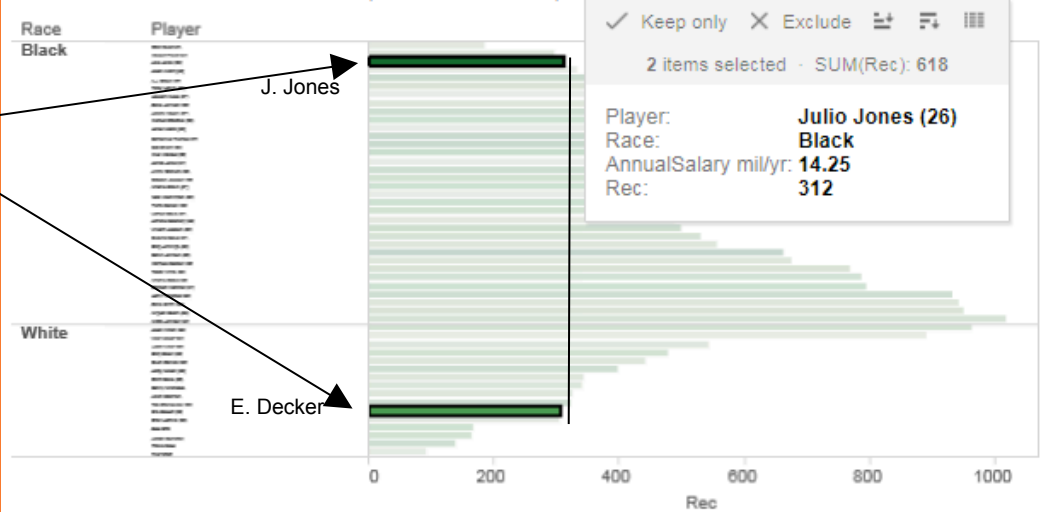
- Yet Jones salary is almost twice as high

- Decker: 306 receptions
- Jones: 312 receptions

- Decker: 28 years old
- Jones: 26 years old

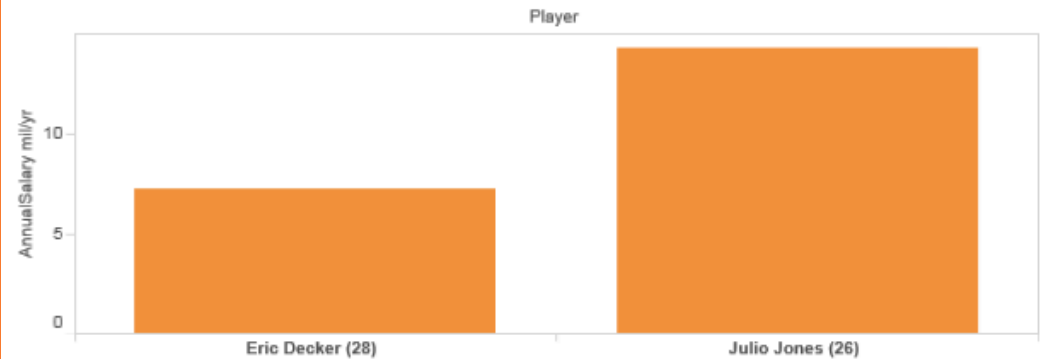
- Decker: 7.25 million salary
- Jones: 14.25 million salary

Career Receptions by Player (Sorted by Race)



Ctrl+Click on one white receiver and one black receiver, with similar career receptions. Which one earns a higher salary?
(Command+Click for mac)

Player Salary (Wide Receiver and Tight End)



- A professional NFL Quarterback's salary is based on a number of different variables including the # of TDs he throws in a season
- As we can see from the data (to the right), race does not play a role in determining one's salary.

Cam Newton (black) - 87 TDs
Peyton Manning (white) - 535 TDs

Note: Manning has been playing in the NFL longer than Newton

Contract Negotiations, Salary Cap, etc.. are also taking into consideration in these situations

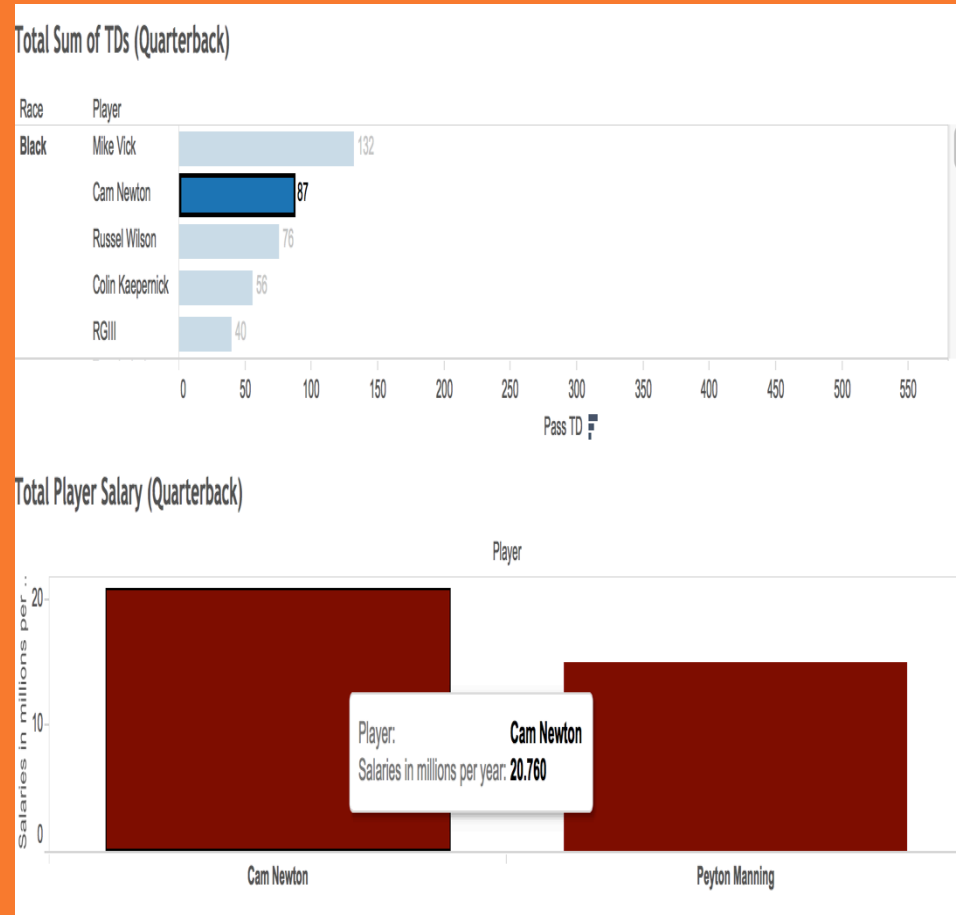


Tableau Visualization:

https://public.tableau.com/shared/X6GWYBH6S?:display_count=yes

Interpreting the Data:

Table 1 Descriptive Statistics

	N	Mean	S.D.	Min	Max
Salary in mil. per year	127	7.49	6.28	0.55	22.13
Race=1 if Black	127	0.65	0.48	0.00	1.00
Touchdowns	127	68.14	81.93	7.00	535.00
NumAllStarGm	127	1.90	2.45	0.00	14.00
Games Played	127	103.35	51.00	12.00	262.00
Years Played	127	8.54	3.65	1.00	18.00
Total Yards	127	11149.98	11847.51	1097.00	71117.00
Pass Yards	127	6473.98	13199.40	0.00	70446.00
Rush Yards	127	1720.98	2547.48	-1.00	11388.00
Rec Yards	127	2955.02	3417.24	0.00	13648.00
Position=1 if QB	127	0.31	0.46	0.00	1.00
Position=1 if RB	127	0.30	0.46	0.00	1.00
Position=1 if WRTE	127	0.39	0.49	0.00	1.00
Observations	127				

Table 2: Regression Results

	(1) Salary in mil. per year	(2) Salary in mil. per year	(3) Salary in mil. per year	(4) Salary in mil. per year
Race=1 if Black	-4.806*** (4.42)	-1.944+ (1.69)	-1.659 (1.54)	-0.499 (0.46)
Touchdowns		0.0373*** (4.27)	0.0137 (0.44)	-0.0104 (0.31)
NumAllStarGm		-0.0407 (0.16)	0.234 (0.82)	0.277 (1.00)
Games Played			0.0372 (1.27)	0.0265 (0.81)
Years Played			-1.127** (2.94)	-1.102** (2.93)
Total Yards			0.000233 (1.13)	0.000418 (1.57)
Position=1 if QB				0 (.)
Position=1 if RB				-2.787 (1.54)
Position=1 if WRTE				0.979 (0.44)
Constant	10.60*** (12.13)	6.283*** (5.73)	10.36*** (7.37)	10.45*** (6.06)
Observations	127	127	127	127
R^2	0.135	0.315	0.416	0.467
Adjusted R^2	0.128	0.298	0.387	0.431
Wald Chi2				
Prob > chi2	0.000	0.000	0.000	0.000
F	19.527	18.865	14.237	12.913
Log lik.	-403.793	-388.974	-378.874	-373.079

Absolute t statistics in parentheses+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Results:

- No evidence that race affects salary
 - Productivity seems to be largest salary factor
 - When players compare in stats, what causes the salary difference?
 - Size, speed, negotiation deals, multiple factors contribute???
 - ****We do notice certain positions are dominated by race****
 - QB predominantly white, RB and WR predominantly black
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