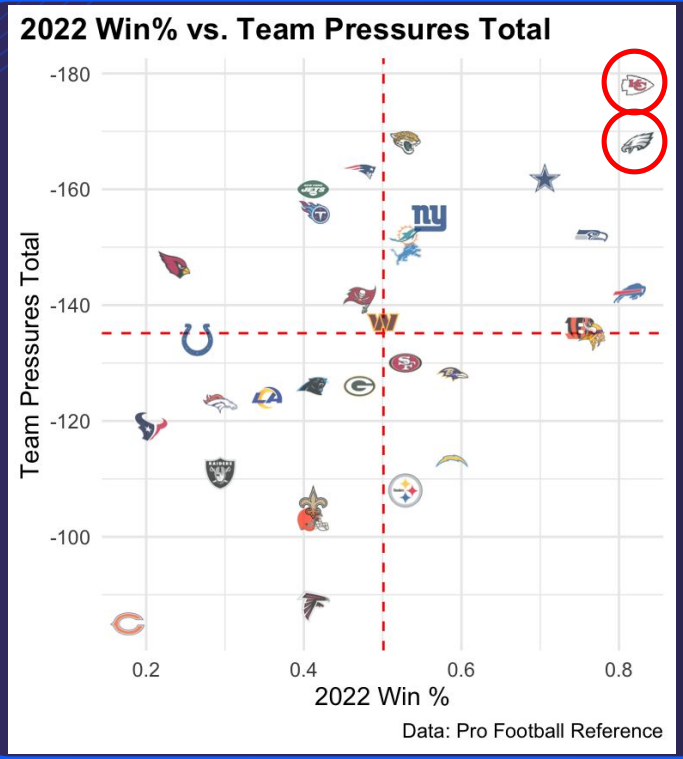
Evaluating 2023 NFL Pass Rush Draft Prospects based on Physical Metrics

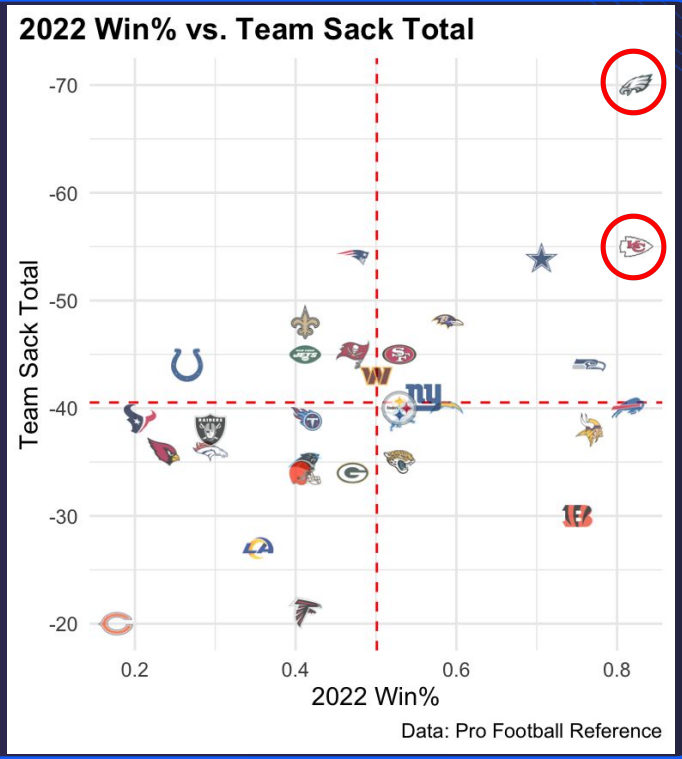
Naveen Elliott and Matt Kendig

1 Introduction

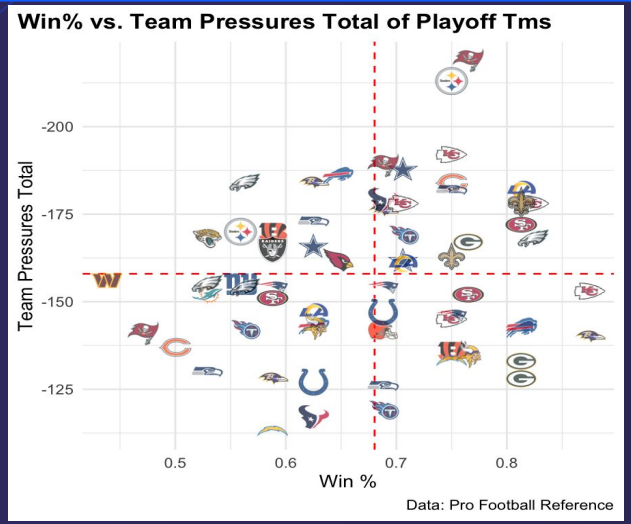
Why is pass-rush so important?

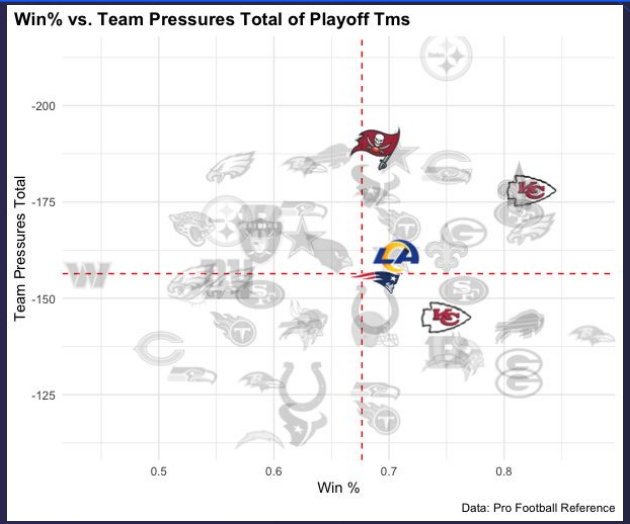
2022 Season


2022 Win% vs. Team Pressures Total
Team Pressures Total
-180
-160
-140
-120
-100
0.2
0.4
0.6
0.8
2022 Win %
Data: Pro Football Reference


2022 Win% vs. Team Sack Total
Team Sack Total
-70
-60
-50
-40
-30
-20
0.2
0.4
0.6
0.8
2022 Win%
Data: Pro Football Reference

Wins vs. Team Pressures

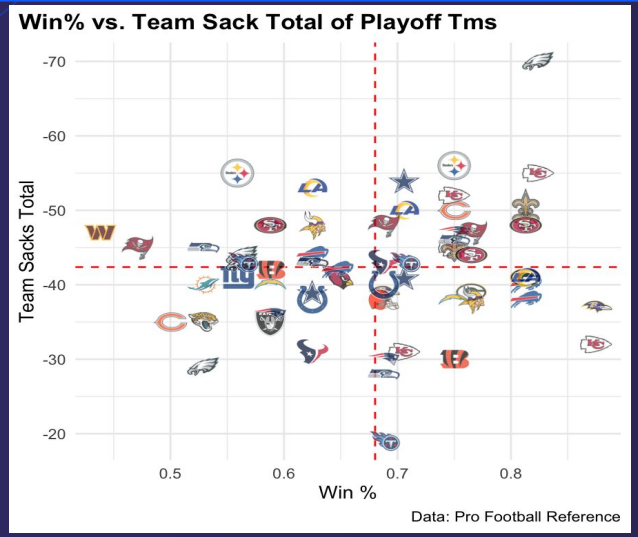


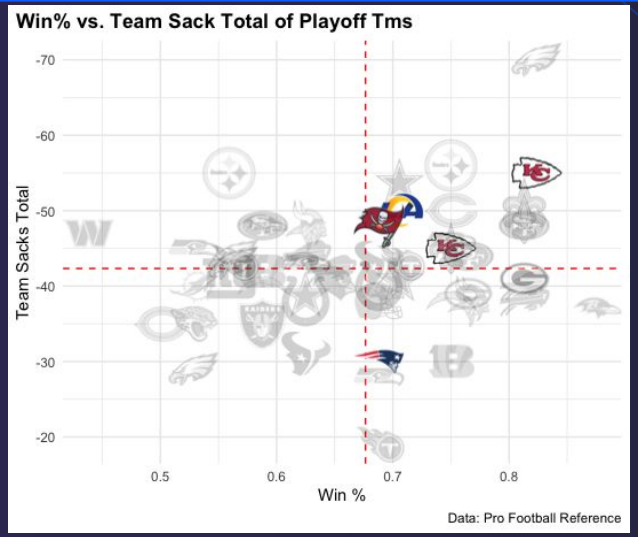


+22 over ‘22 season avg.

+9 over playoff avg.

Wins vs. Team Sacks





+2 over ‘22 season avg.

+3 over playoff avg.

2

Performance

Tiering current players by on-field performance

Methodology - Tiering

- ***Ranked Players Based on Individual Pressure Rates over the Last 5 Years (2018-2022)***
  - Pro-Bowl Players (Top 10)
  - Every-Down Starters (25th Percentile)
  - Rotational Starters (50th Percentile)

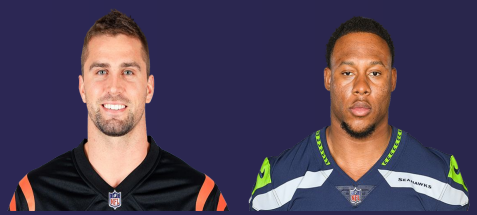
Pro Bowlers	Every-Down Starters	Rotational Starters
		

Methodology - Classifying Edges

- ***Found pressure rate over the last 3 years of edges drafted after 2018***
  - Pro-Bowl Players (>2.35 Pr. Rate)
  - Every-Down Starters (>1.67 Pr. Rate)
  - Rotational Starters (>1.11 Pr. Rate)

Pro Bowlers

Every-Down Starters



Rotational Starters

3

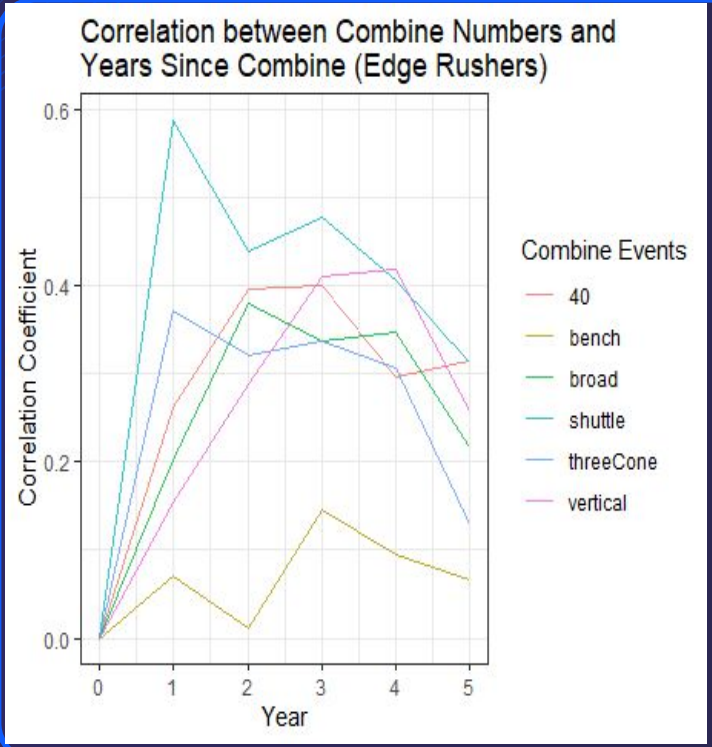
Combine

Use Combine data to find correlation of physical metrics to pressure rates

Our Process

- Our goal for this section of the project was to analyze data from 2018 to 2022, using combine results from 2013 to 2022
- Basically, we wanted to look at the relationship between a player's combine to their performance over the course of their NFL career
- We did this by forming five categories of data:
  - Rookies
  - 2nd Year Players
  - 3rd Year Players
  - 4th Year Players
  - 5th Year Players
- Once we formed these five distinct datasets, we did a few analyses:
  - First, we looked at the correlations of combine statistics to pressure rates from each of the datasets and identified KPI's
  - Then, we conducted several linear regressions to determine the best predictors for pressure rates in the NFL both on a year-to-year basis (rookies vs 5th-year players, for example) and on certain events in the combine (40 or vertical, for example)

Event Correlations



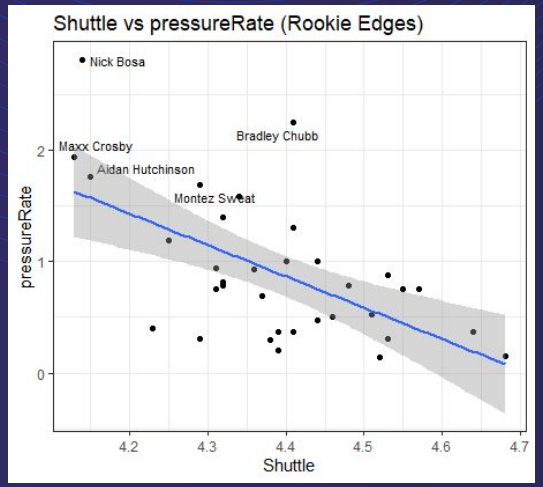
Based on these charts, there are a couple of observations that we can make:

1) The low impact of benching on pressure rates

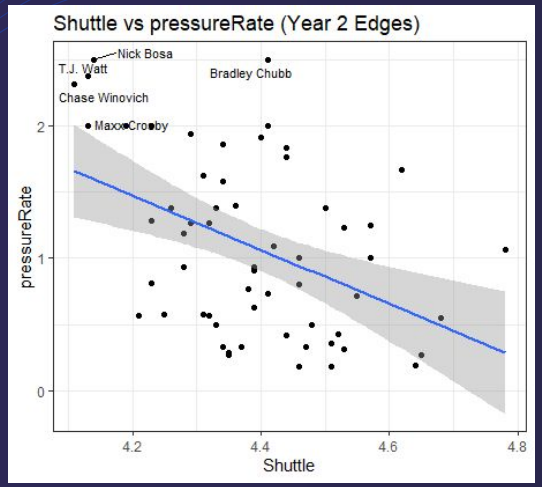
2) The heavy influence of the shuttle, and steady effect of 40 and vertical times on edge rushers

Linear Regression Highlights (Edges)

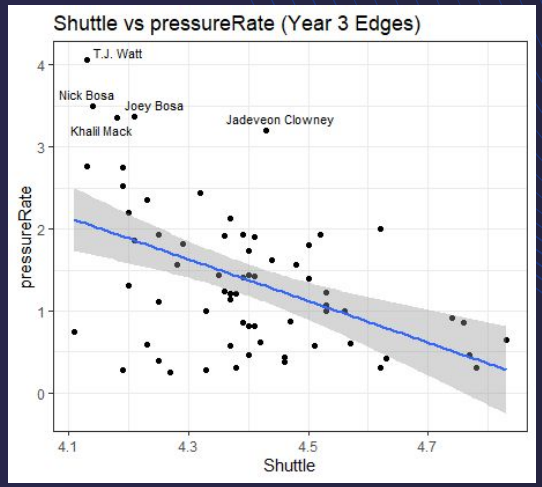
- Benching is again very low! R-squared is almost nothing while p-value is high (second year defensive tackles where the r-squared value is 0 and the p-value is 0.7067)
- Highlights for Edges
  - Year 1 - Shuttle is a great thing to look at (r-squared of 0.35 and p-value of 0.003)
    - makes up most of the multi-variable linear regression for Y1
  - Year 2 - Shuttle is another good thing to look at, not as high though with a r-squared value of 0.19 and a p-value of 0.001
  - Year 3 - Shuttle again is the best event for edge rushers with a r-squared value of 0.23 and a p-value of nearly 0
  - Year 4 - Vertical jump becomes the best event to look at with a r-squared value of 0.17 and a p-value of 0.003
  - Year 5 - Nothing really is good to look at, but 40 has the highest r-squared at 0.10 with the lowest p-value of 0.025.
- All of these statistics are highly statistically significant, which shows a relationship between each of them and the pressure rates from each year in a player's NFL career



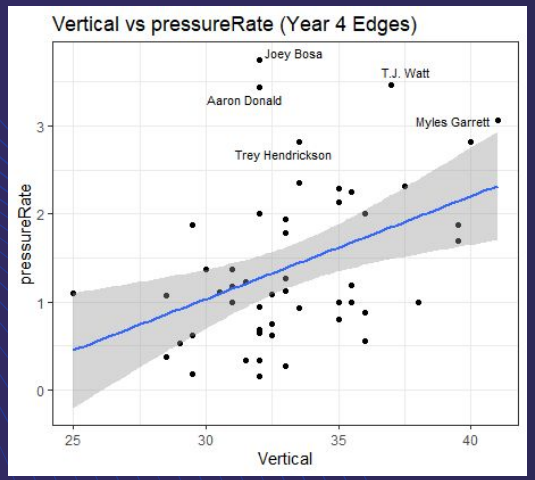
95% confidence interval of Shuttle Year 1 Edges



95% confidence interval of Shuttle Year 2 Edges

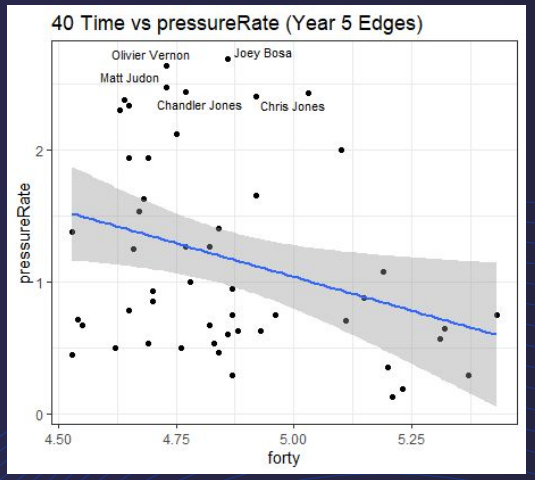


95% confidence interval of Shuttle Year 3 Edges



95% confidence interval of Vertical Year 4 Edges

95% confidence interval of 40 Year 5 Edges



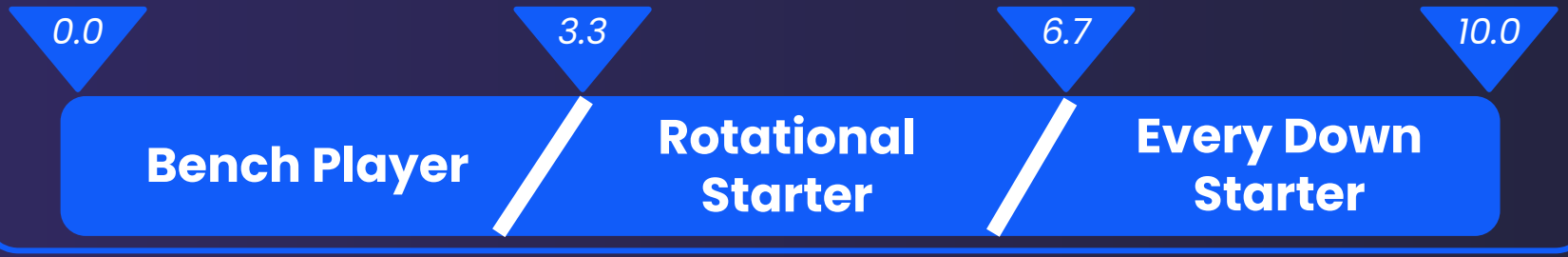
4

Conclusion

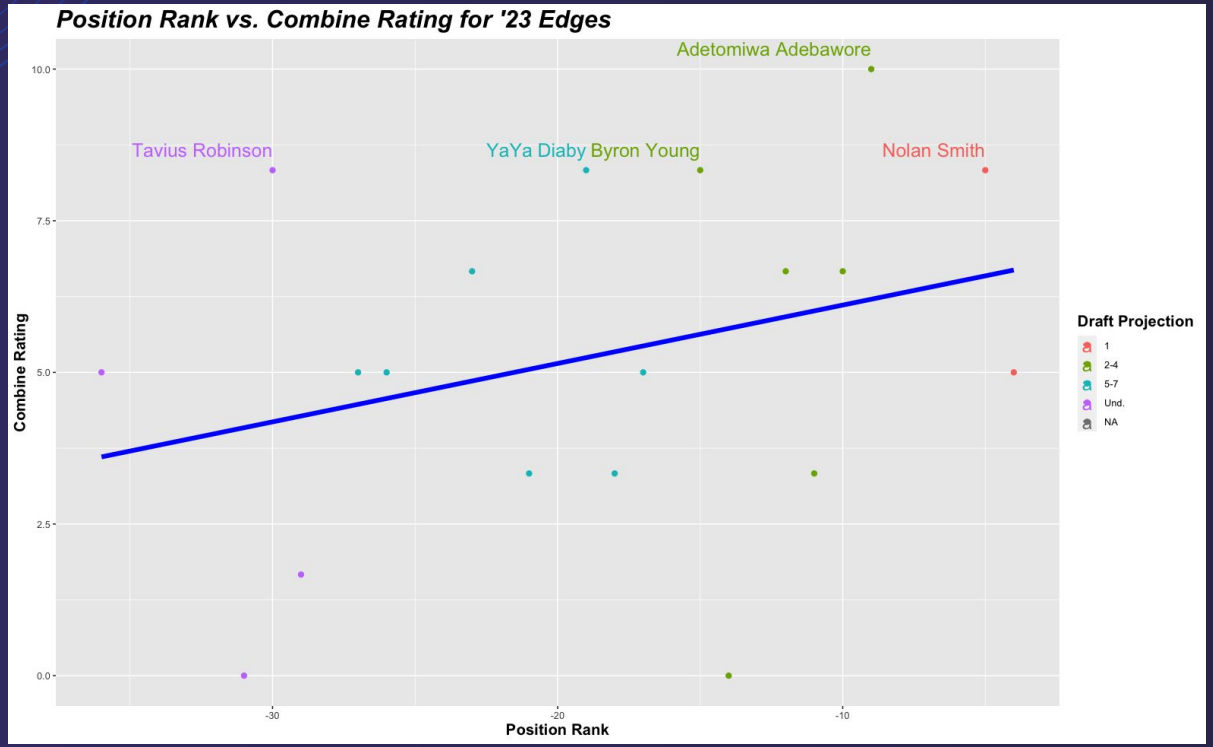
Evaluate talent in 2023 Draft based on physical metrics

Combine Rating Methodology

- Determined high priority combine events based on linear regression results
- Declared thresholds for both high priority and low priority events, based on average results of recently drafted, (Drafted in or after 2018), NFL players in each performance tier
  - Reaching thresholds in high priority categories are weighted higher than low priority ones
- Thresholds are determined by position



Combine Rating Methodology



Positive correlation between pos. rank and combine rating

Value in picks throughout the draft board

Only considered players who participated in 2+ combine events

Adetomiwa Adebawore - EDGE

College: Northwestern

Age: 22

Height: 6'2

Weight: 282

Ovr Rank: 47

Pos Rank: 9

NFL Rookie Stats: 5
GP: 1 sack

High Priority:

- ☐ ***40 Yard Dash*** - 4.49 sec. - *5th*
- ☐ ***Vertical Jump*** - 37.5" - *3rd*

Pro Bowl Traits:

- ☐ ***40 Yard Dash***
- ☐ ***Broad Jump***

Combine Rating:

10.0

Player Comp.

- ☐ ***Osa Odighizuwa - DAL***

PROJECTION: *2nd Rounder*

Byron Young - EDGE

College: Tennessee

Age: 25

Height: 6'2

Weight: 250

Ovr Rank: 95

Pos Rank: 15

NFL Rookie Stats: 9 GP: 39 tackles, 5 sacks, 2 FF

High Priority:

- ☐ ***40 Yard Dash*** - 4.43 sec. - *2nd*
- ☐ ***Vertical Jump*** - 38.0" - *2nd*

Pro Bowl Traits:

- ☐ ***40 Yard Dash***
- ☐ ***Broad Jump***

Combine Rating:

8.3

Player Comp.

- ☐ ***Arnold Ebiketie - ATL***

PROJECTION: *3rd Rounder*

Opportunities for Future Research

- *Applying this type of analysis to other positions*
  - *Offensive lineman, secondary, middle linebackers, running backs, wide receivers*
- *Getting more data from other seasons or using tracking data*
  - *Looking at each player's in-game speed in college*
  - *Reviewing pressure numbers from earlier seasons (prior to the 2018 season)*
- *Looking at draft position in relation to combine statistics and pressure rates*
  - *This would theoretically add more emphasis on skill/performance into the model*

Thank You

Questions?

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Sources

- ***https://www.pro-football-reference.com/***
- ***https://www.sportsinfosolutions.com/***
- ***https://www.nflmockdraftdatabase.com/***
- ***https://nflcombineresults.com/***