Evaluating 2023 NFL Pass Rush Draft Prospects based on Physical Metrics

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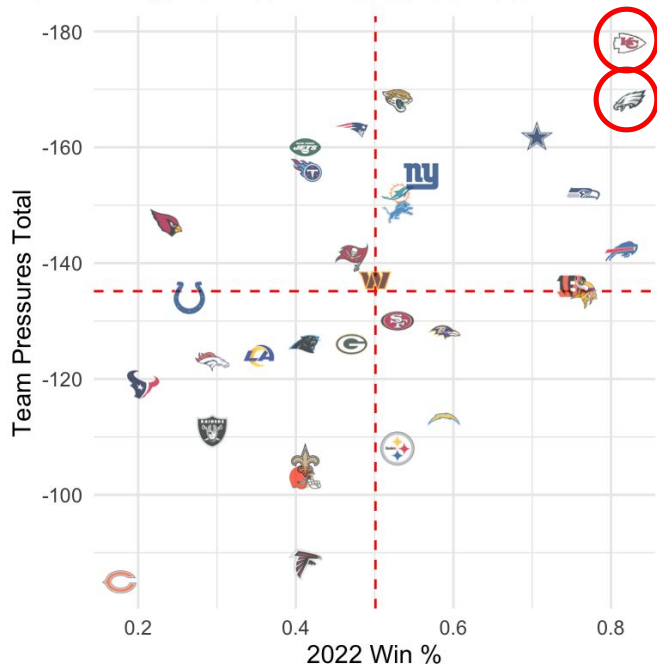
1

Introduction

Why is pass-rush so important?
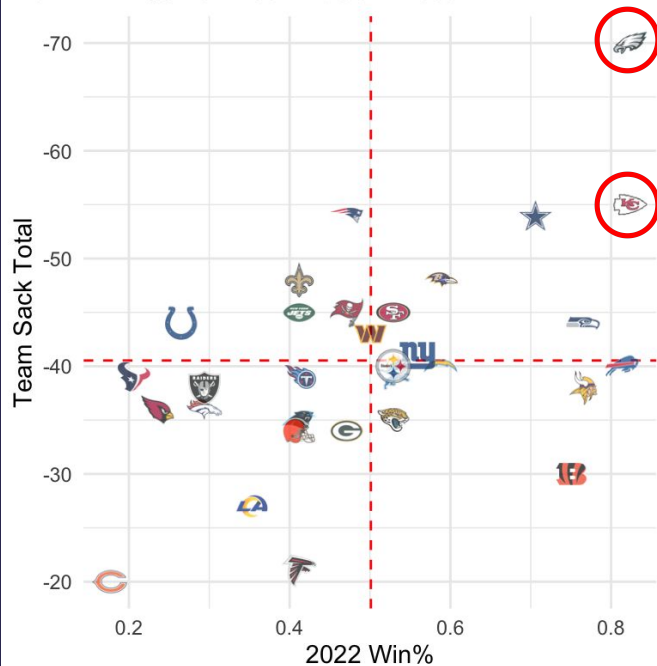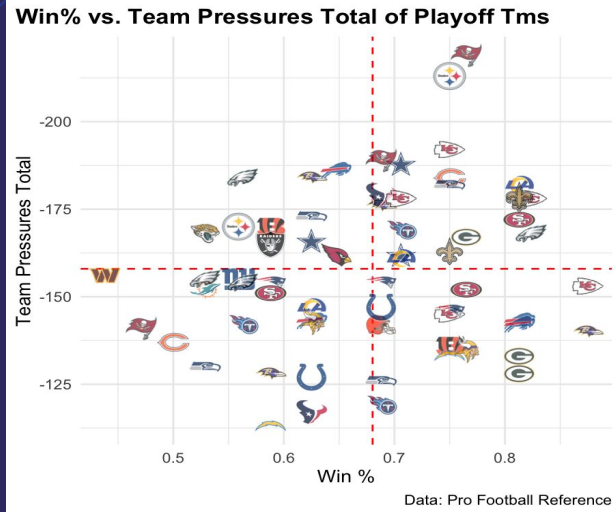
2022 Season

Wins vs. Team Pressures

Win% vs. Team Pressures Total of Playoff Tms
Team Pressures Total vs. Win %
Data: Pro Football Reference

Win% vs. Team Pressures Total of Playoff Tms
Team Pressures Total vs. Win %
Data: Pro Football Reference

+22 over '22 season avg.
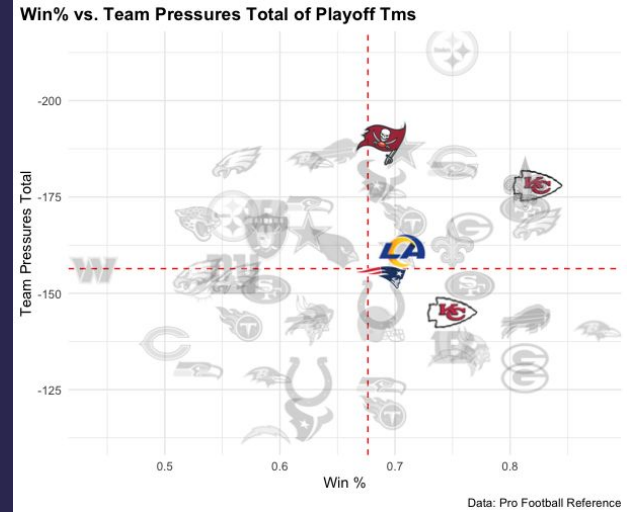
+9 over playoff avg.

Wins vs. Team Sacks

Win% vs. Team Sack Total of Playoff Tms

Team Sacks Total

Win %

Data: Pro Football Reference

Win% vs. Team Sack Total of Playoff Tms

Team Sacks Total

Win %

Data: Pro Football Reference
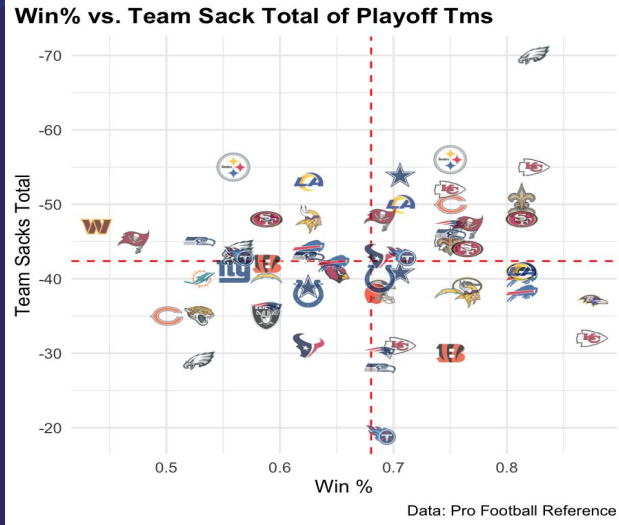
+2 over '22 season avg.
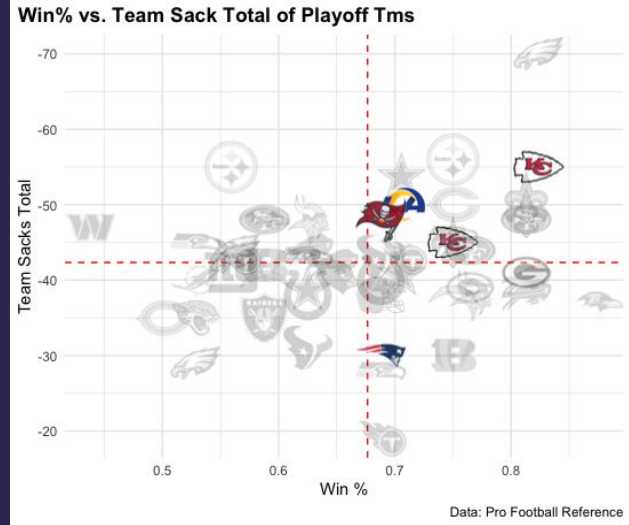
+3 over playoff avg.

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

Correlation between Combine Numbers and Years Since Combine (Edge Rushers)
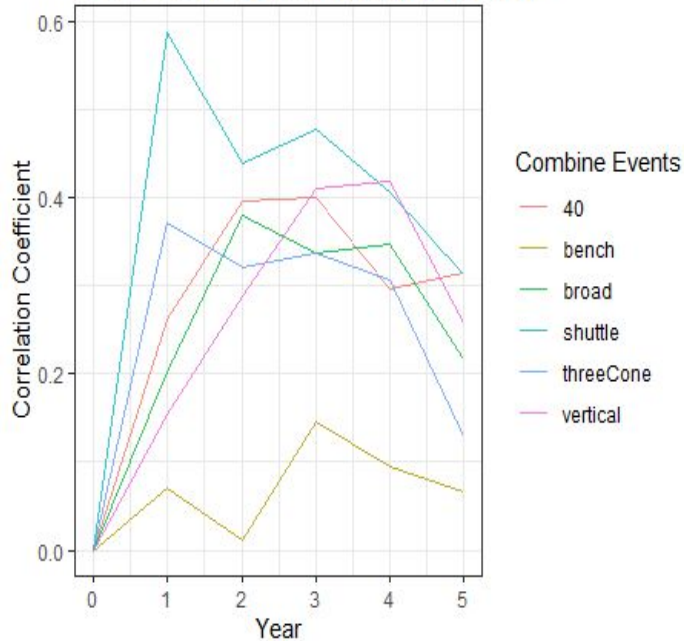
Based on these charts, there are a couple of observations that we can make:

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
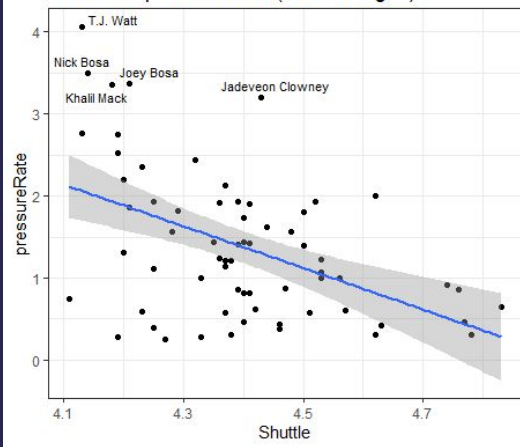
Shuttle vs pressureRate (Rookie Edges)
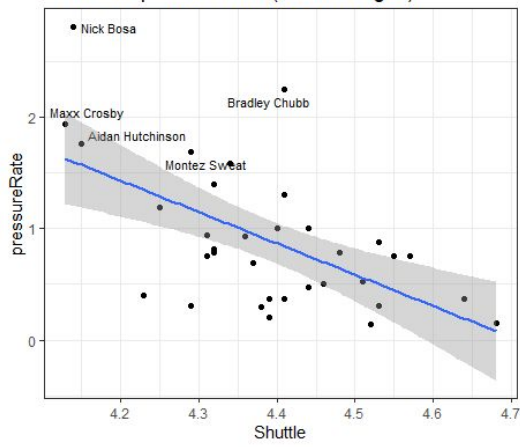
95% confidence interval of Shuttle Year 1 Edges
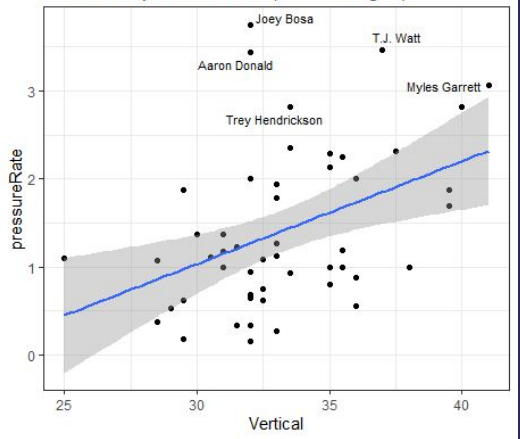

Shuttle vs pressureRate (Year 2 Edges)
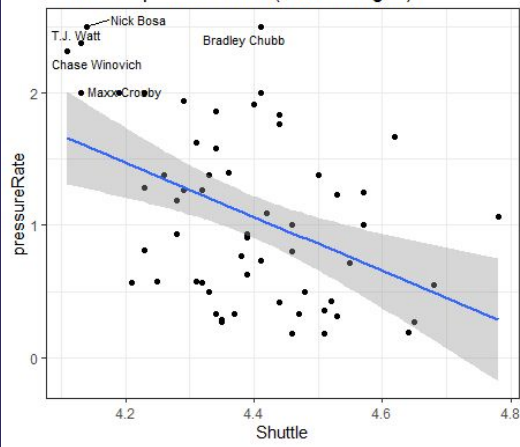
95% confidence interval of Shuttle Year 2 Edges

Shuttle vs pressureRate (Year 3 Edges)

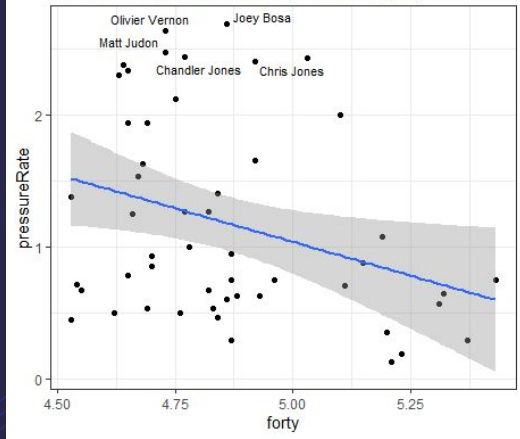95% confidence interval of Shuttle Year 3 Edges

Vertical vs pressureRate (Year 4 Edges)

95% confidence interval of Vertical Year 4 Edges

95% confidence interval of 40 Year 5 Edges

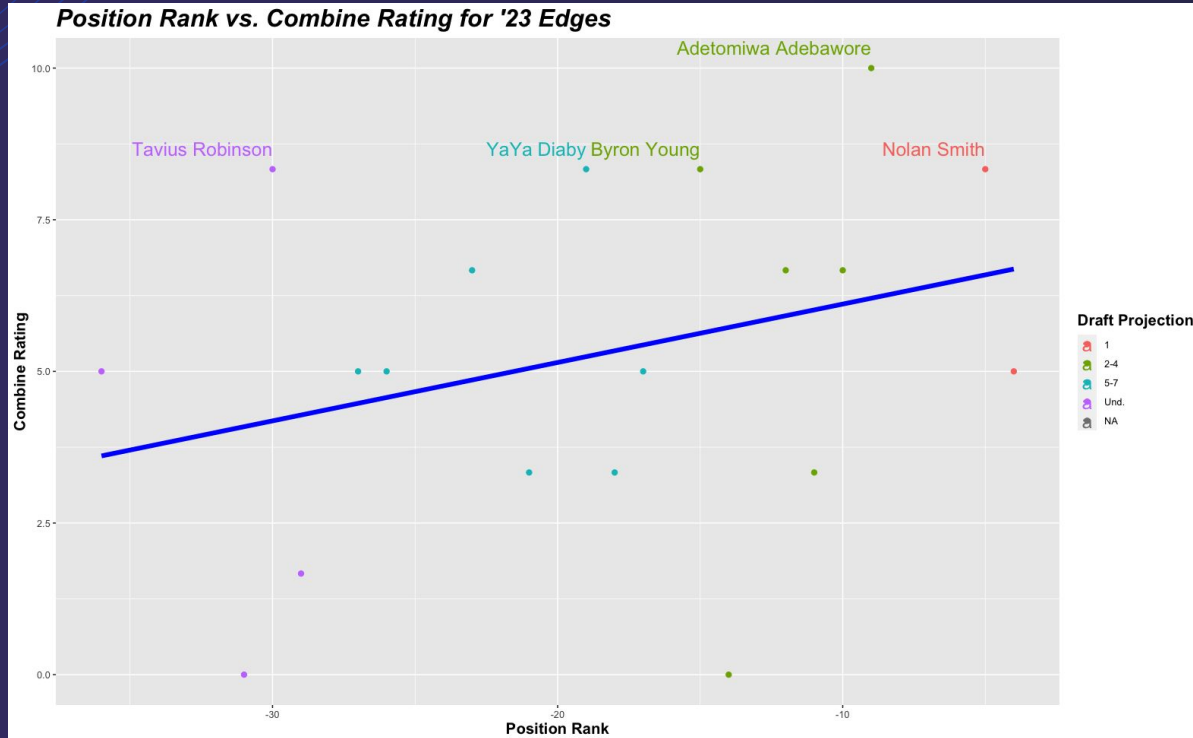40 Time vs pressureRate (Year 5 Edges)

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

0.0   *3.3*   *6.7*   *10.0*

Bench Player / **Rotational Starter** / **Every Down Starter**

Combine Rating Methodology

Position Rank vs. Combine Rating for '23 Edges

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: 1
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*

Player Comp.

☐ Osa Odighizuwa – DAL

Combine Rating:

10.0

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*

Gervon Dexter – DT

College: Florida

Age: 21

Height: 6'5

Weight: 310

Ovr Rank: 72

Pos Rank: 8

Last Year Stats: 13 GP: 55 Tackles, 4 TFL, 2 Sacks, 1 INT

High Priority:

- ☐ *40 Yard Dash* – 4.88 sec. – *5th*
- ☐ *3 Cone* – 7.50 sec. – *5th*

Pro Bowl Traits:

- ☐ 40 Yard Dash
- ☐ Weight

Player Comp.

- ☐ *Dalvin Tomlinson – CLE*

Combine Rating:

7.5

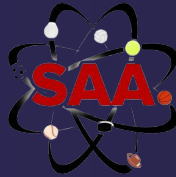**PROJECTION:** *3rd Rounder*

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

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