

Who are the NFL's Most Valuable Offensive Position Players?

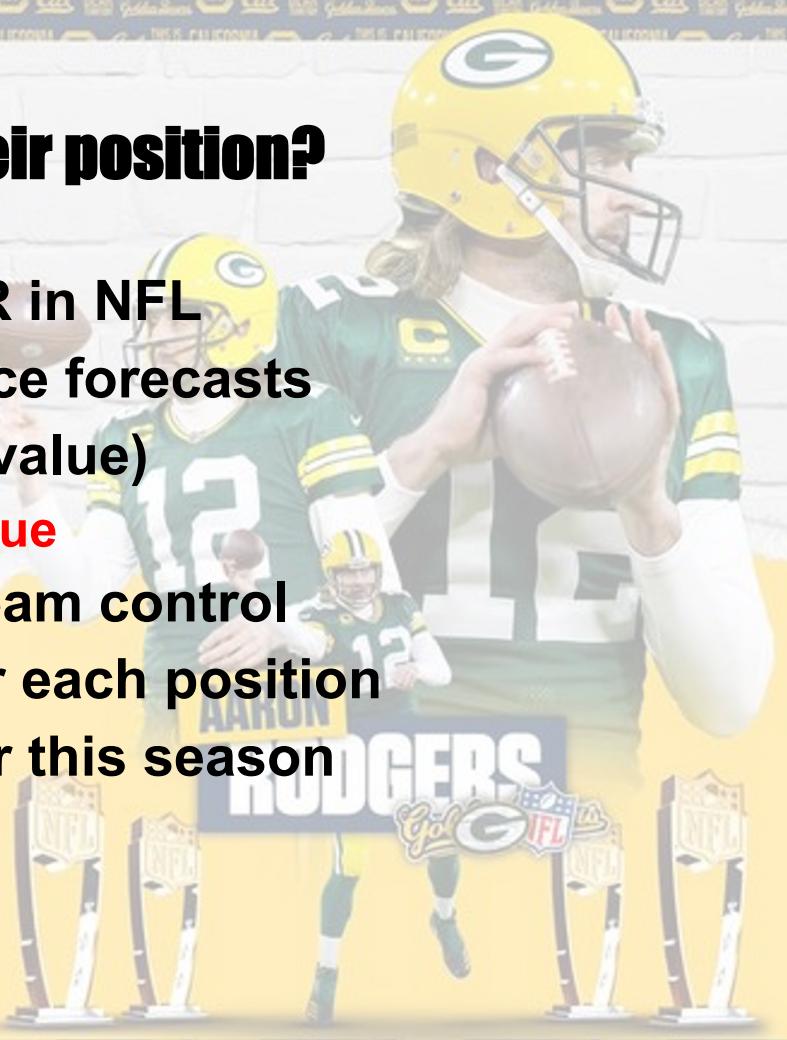
Gridiron Analytics Final Case Competition

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The Case: Who are the “MVP”s of their position?

- Top player-assets at QB, RB, WR in NFL
- 10 players each, with performance forecasts
- Ranked by surplus value (asset value)
 - Essentially **calculating trade value**
- Over the years player is under team control
- Clearly ranked from #1 to #10 for each position
- Do not consider free agents after this season

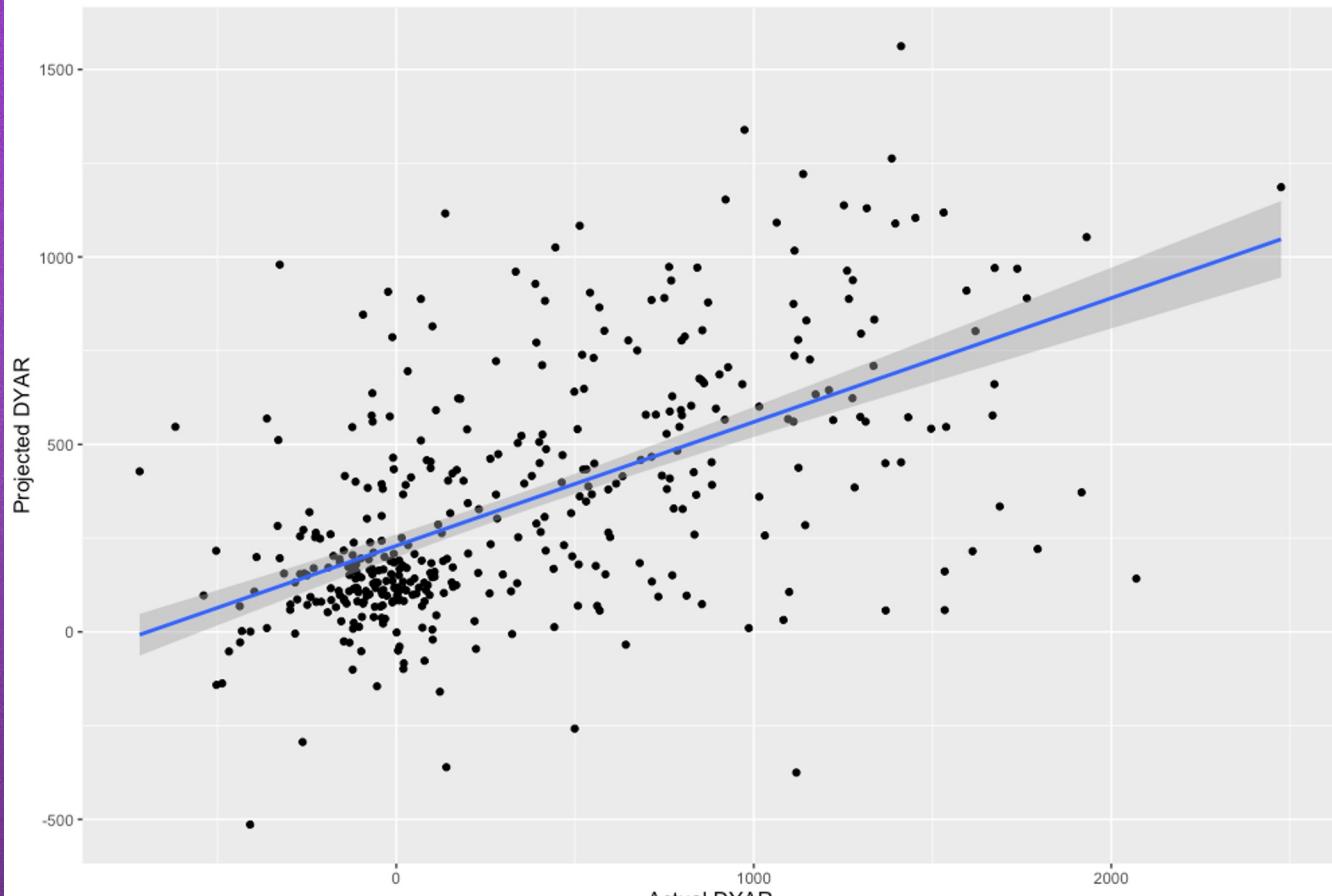




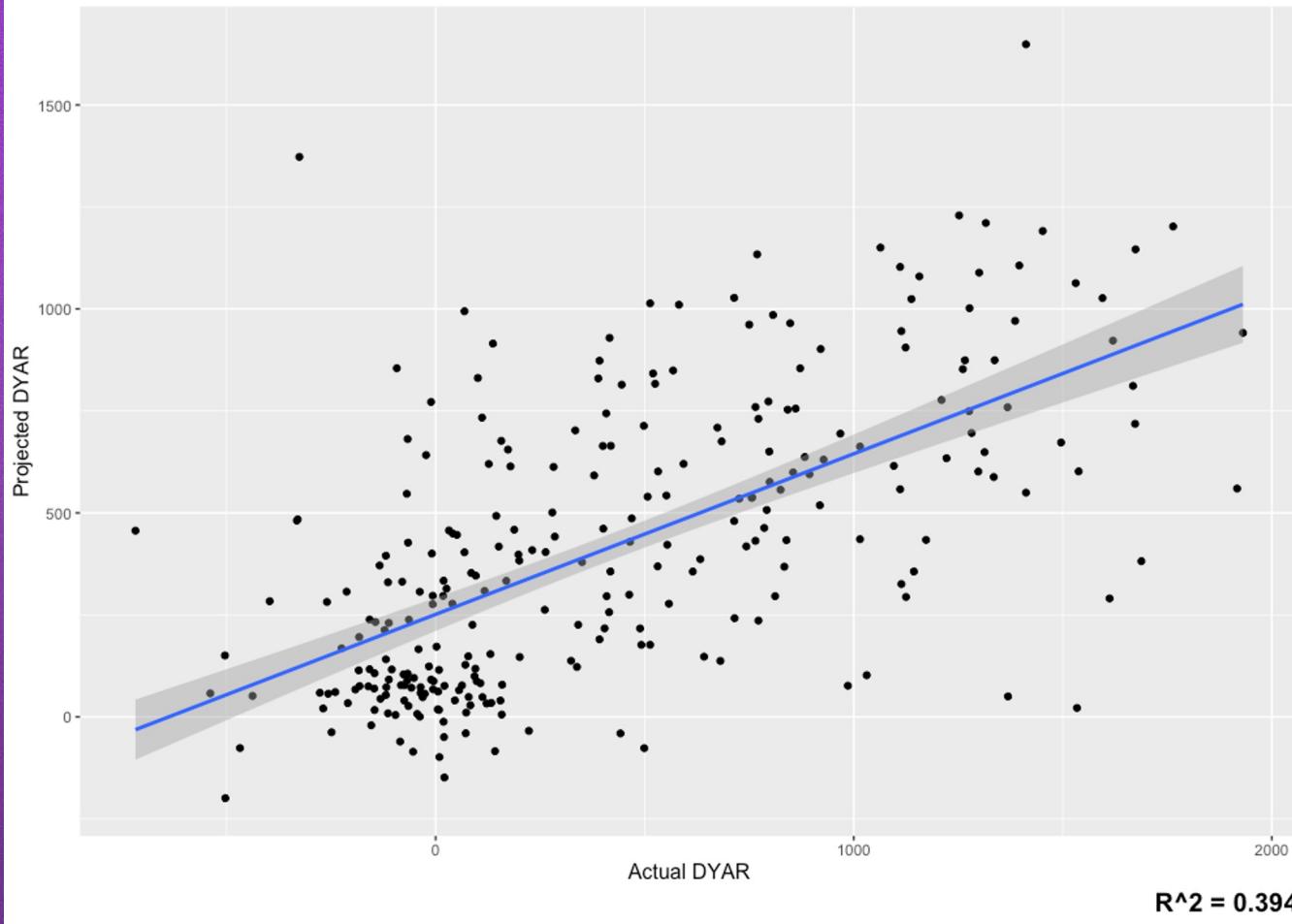
Our Process

- **Build models to determine players' on-field value**
 - Metric: Defensive-Adjusted Yards Above Replacement
 - Market value = Total Guaranteed Dollars / 100 DYAR
- **Train models for each position separately**
 - Input: Age & previous seasons DYAR
 - Data: 2012 to 2021 seasons
- **Use contracts from 2012 to 2021 for dollar value**
- **Project DYAR over the life of contract**
- **Surplus = Projected Value - Contract Value**

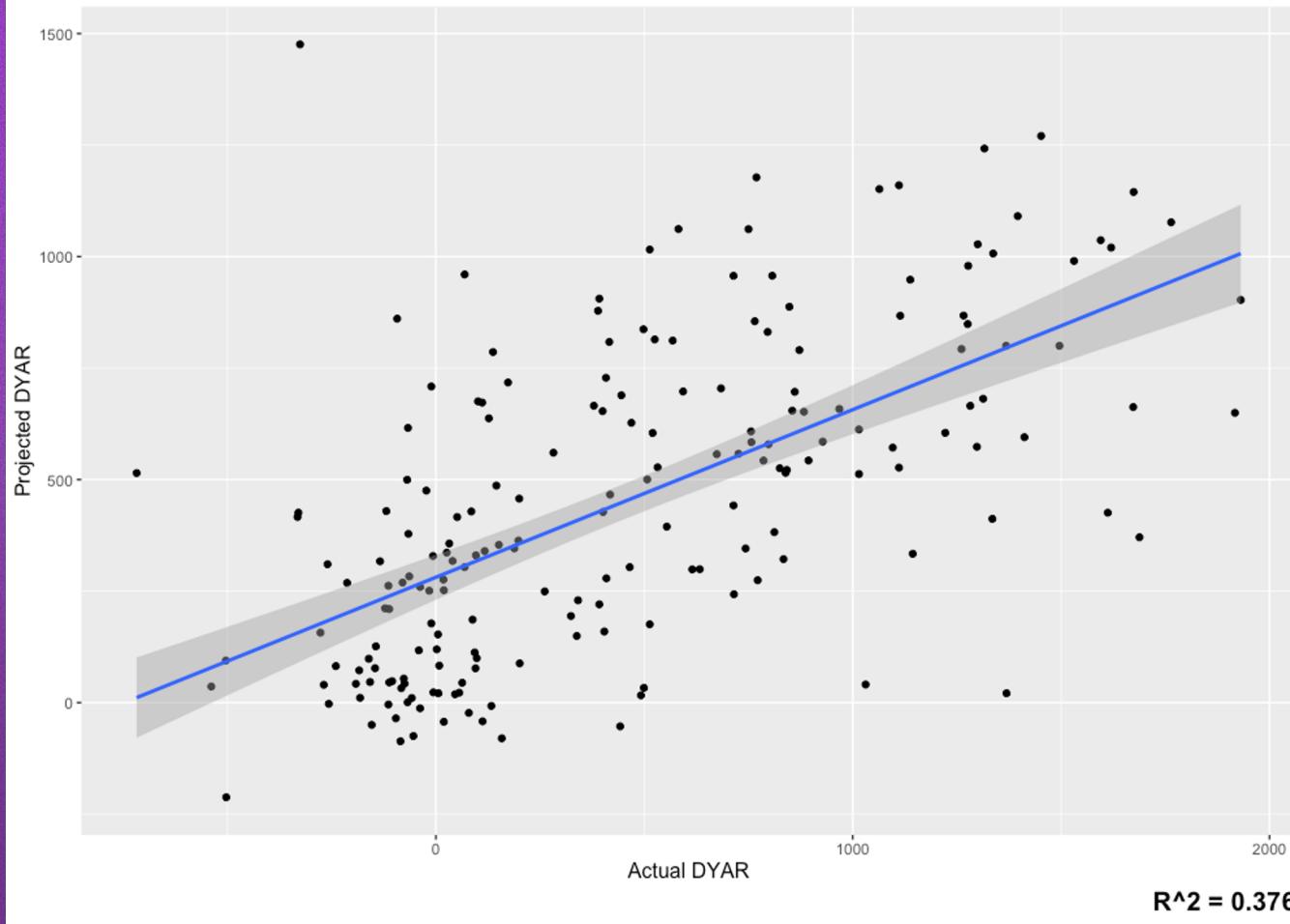
NFL Quarterbacks DYAR vs. Projected DYAR from One-Year Model with 401 QB-Seasons from 2013 to 2021



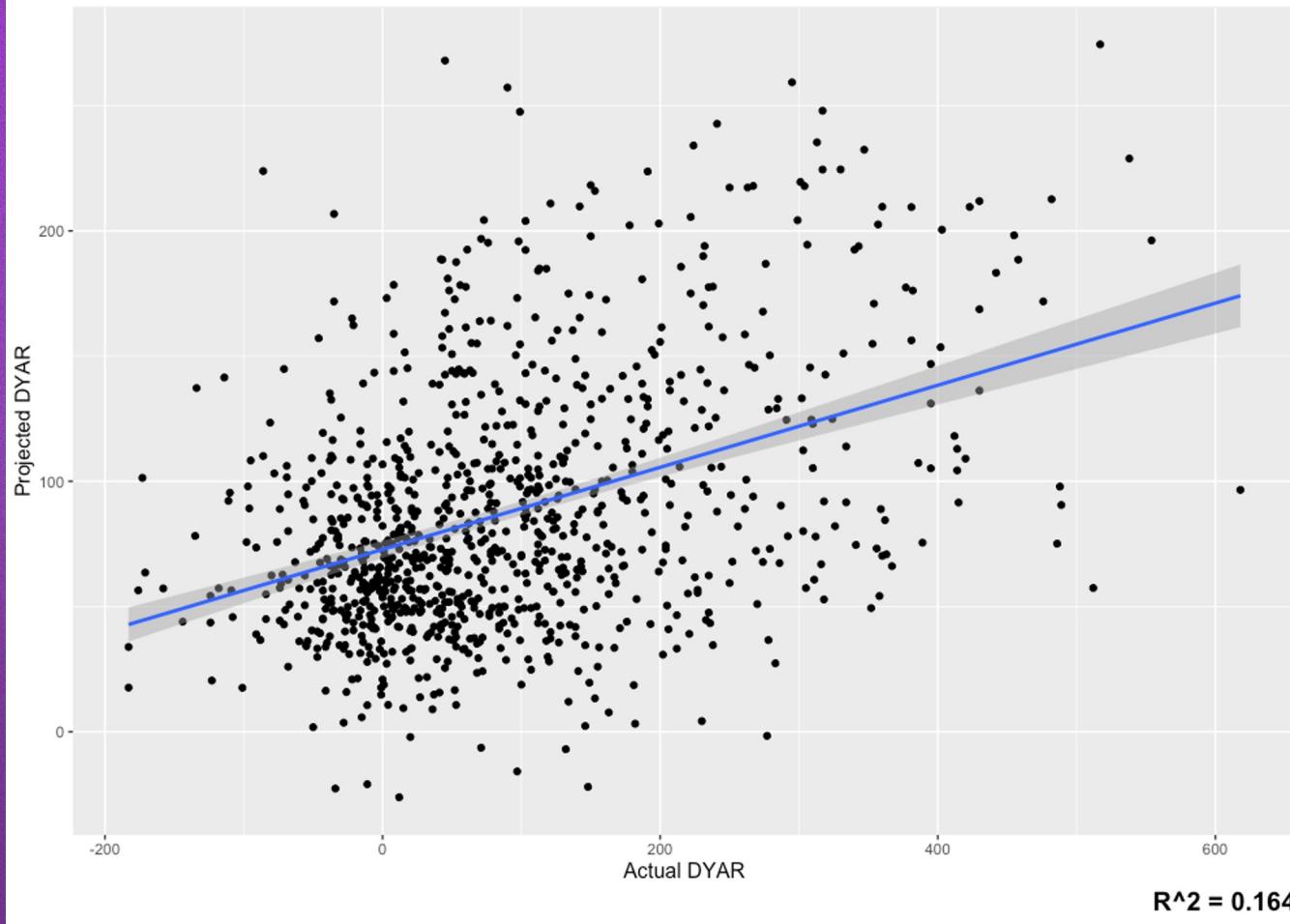
NFL Quarterbacks DYAR vs. Projected DYAR from Two-Year Model
with 274 Projected QB-Seasons from 2014 to 2021



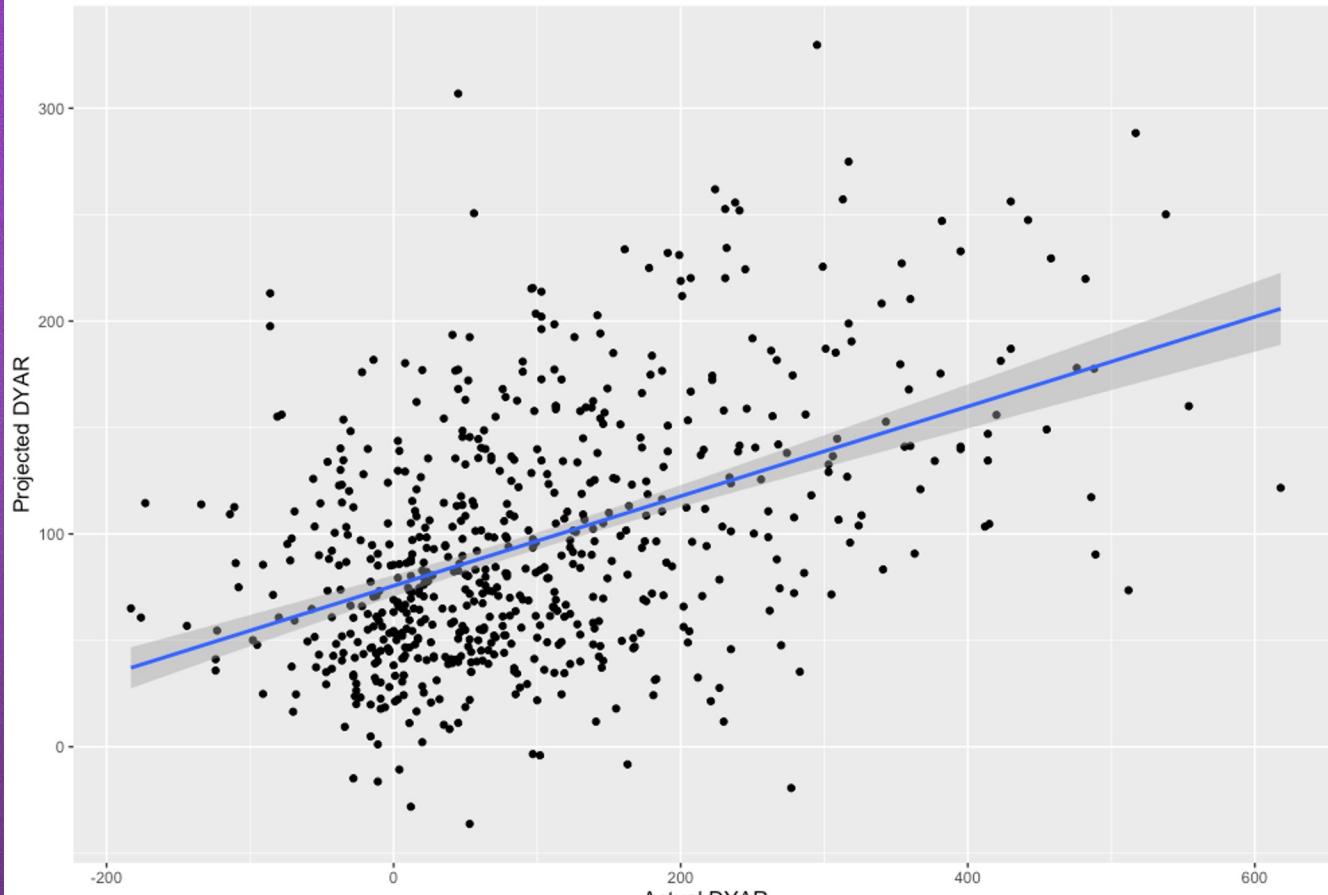
NFL Quarterbacks DYAR vs. Projected DYAR from Three-Year Model with 193 Projected QB-Seasons from 2015 to 2021



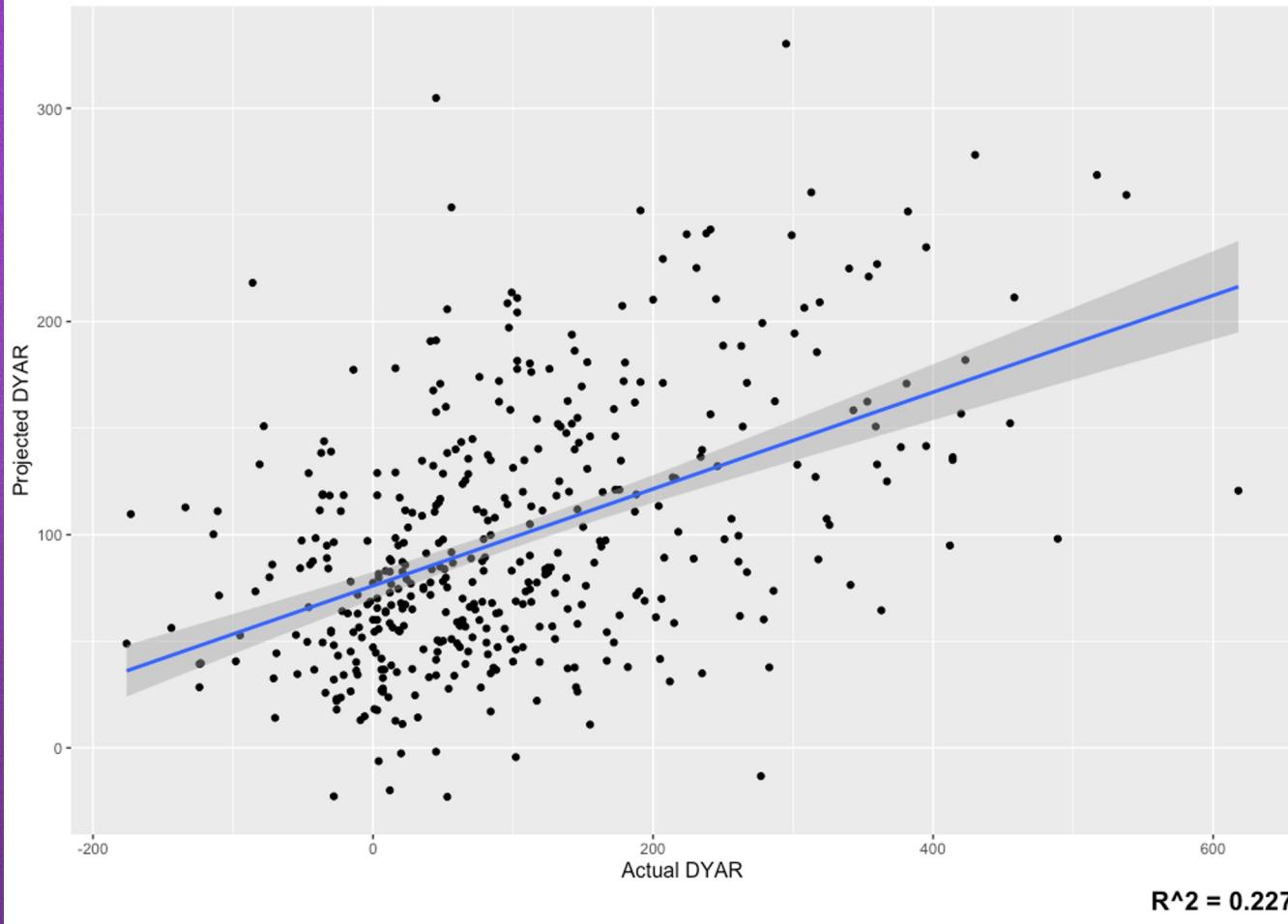
NFL Wide Receivers DYAR vs. Projected DYAR from One-Year Model
with 1001 WR-Seasons from 2013 to 2021



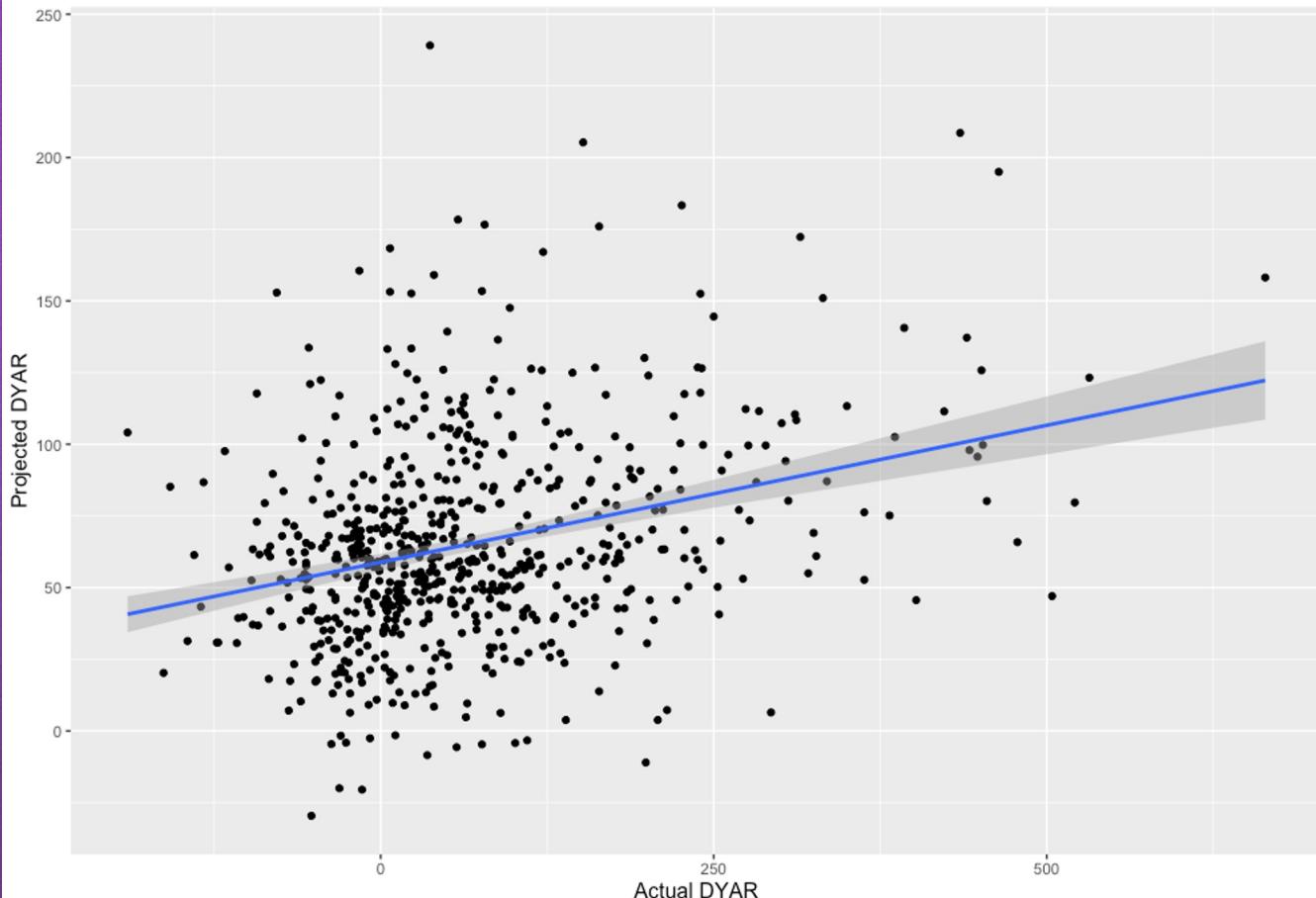
NFL Wide Receivers DYAR vs. Projected DYAR from Two-Year Model
with 625 Projected WR-Seasons from 2014 to 2021



NFL Wide Receivers DYAR vs. Projected DYAR from Three-Year Model
with 408 Projected WR-Seasons from 2015 to 2021

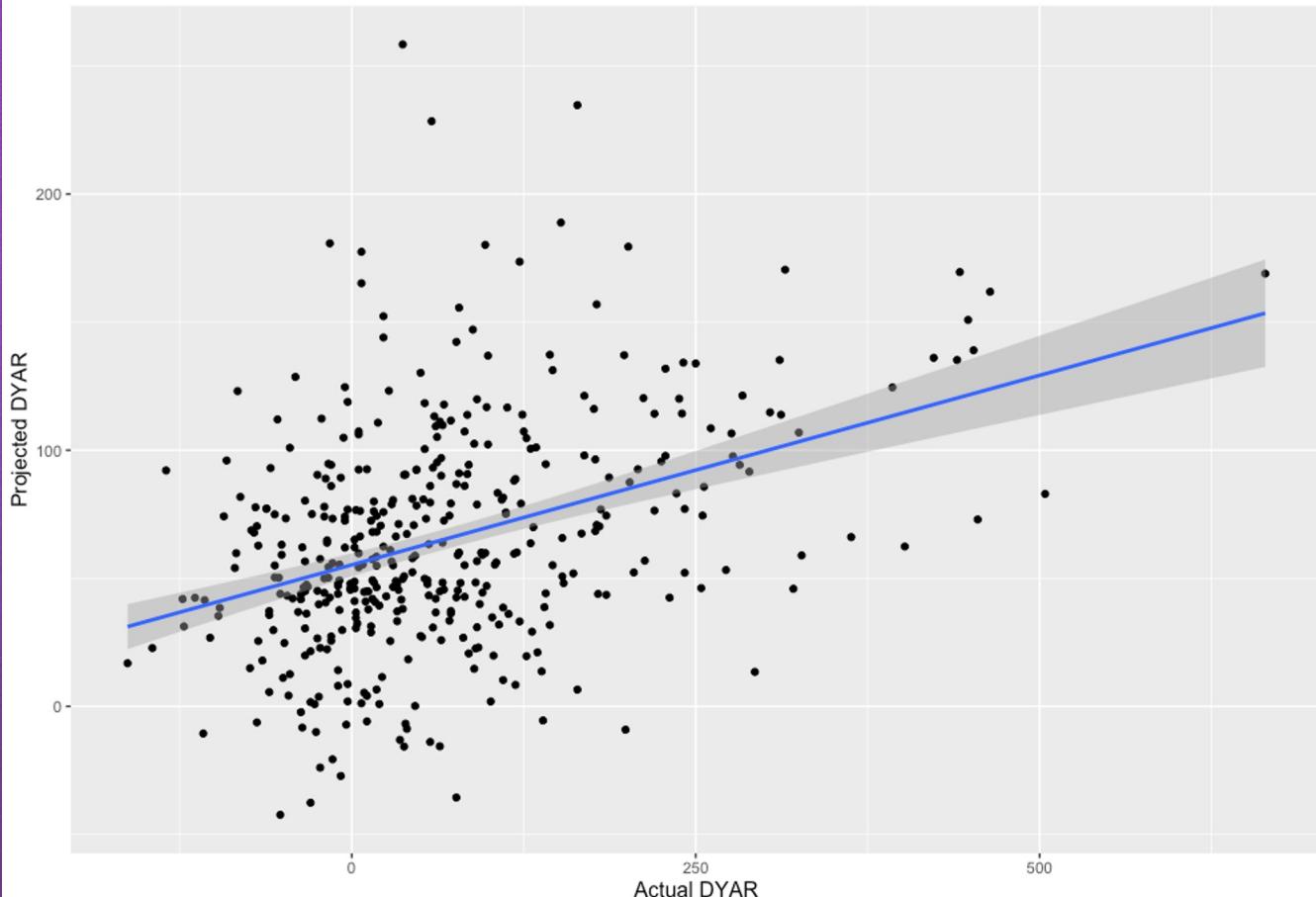


NFL Running Backs DYAR vs. Projected DYAR from Two-Year Model
with 665 RB-Seasons from 2013 to 2021

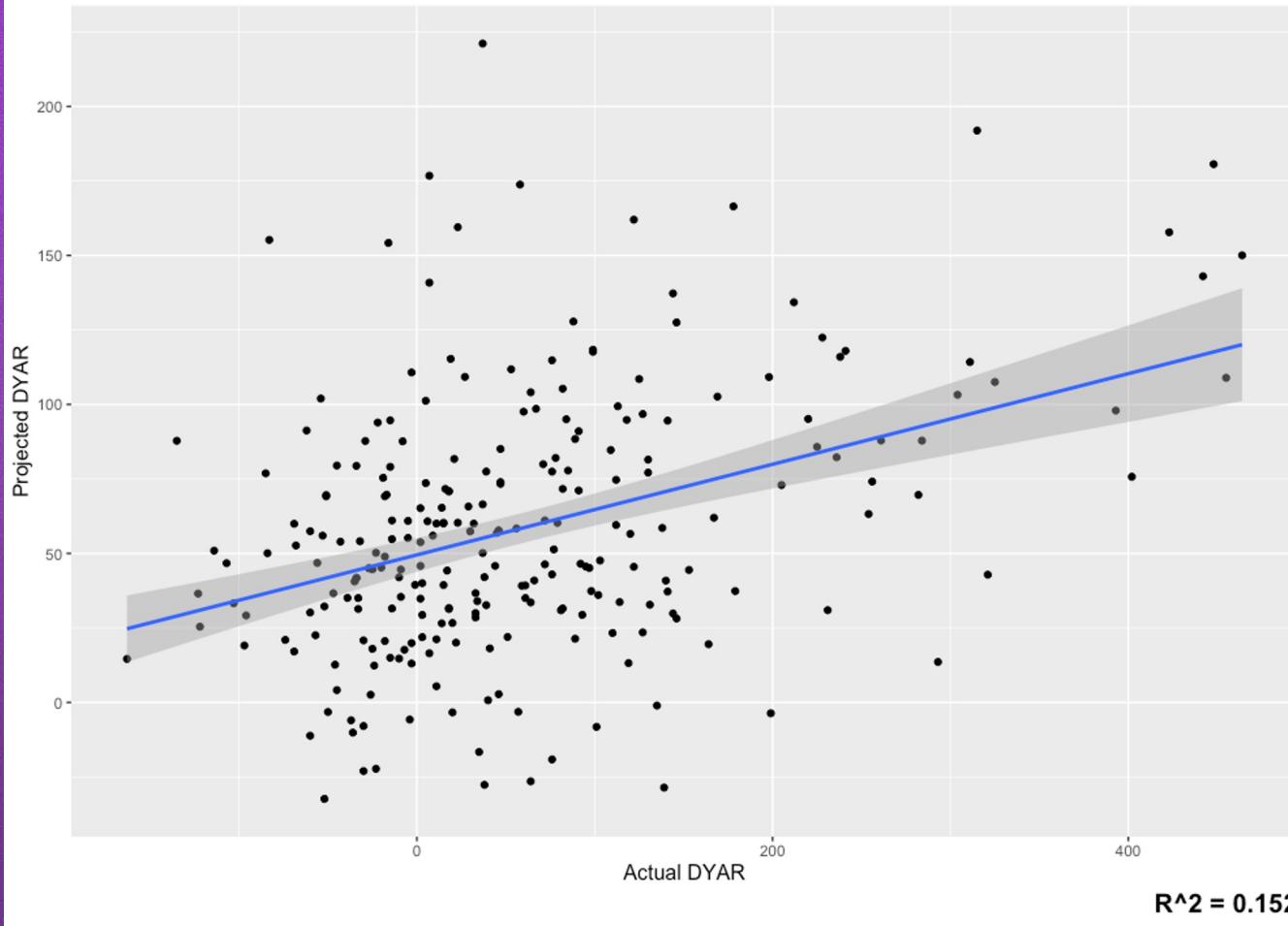


$R^2 = 0.096$

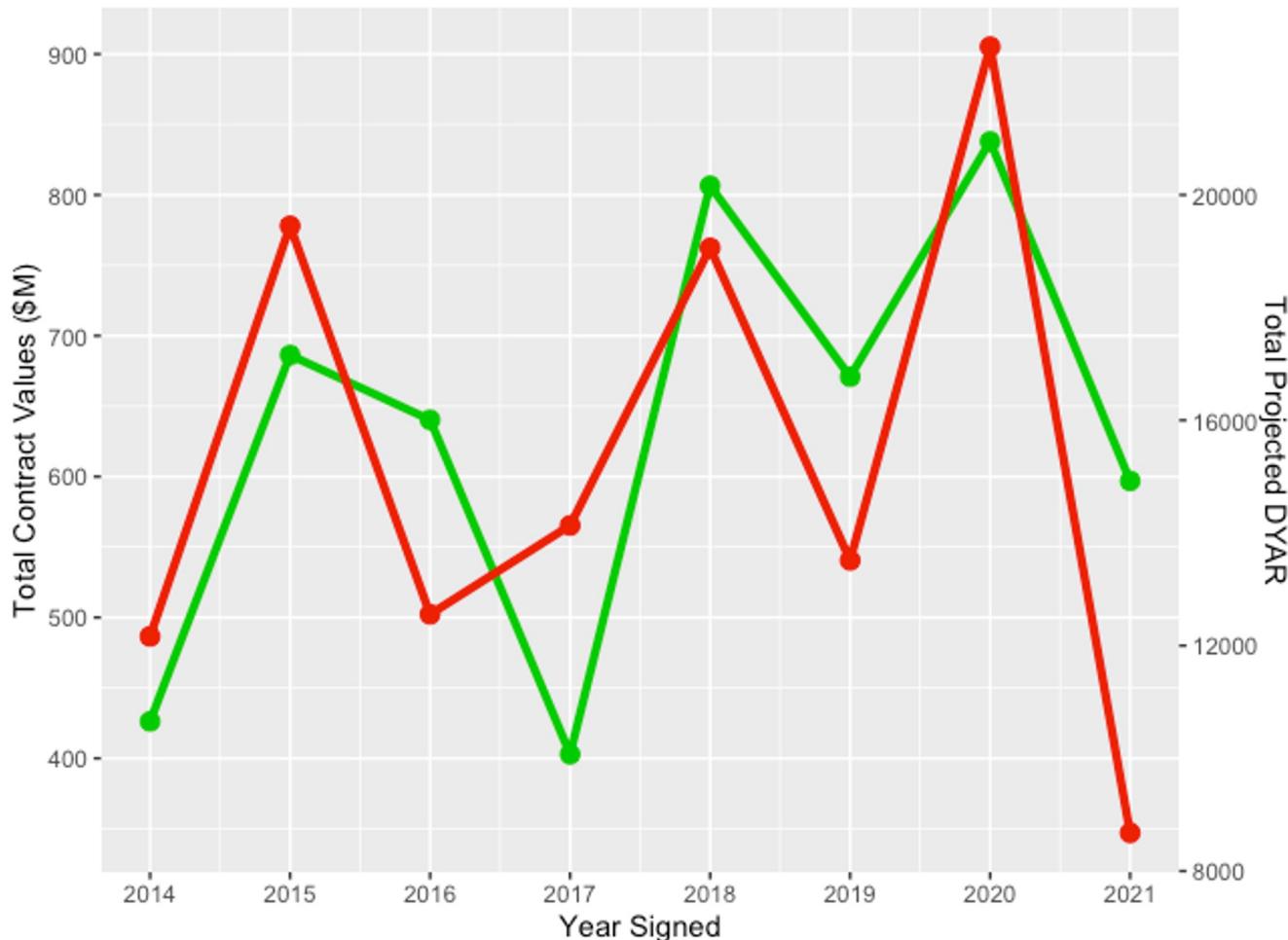
NFL Running Backs DYAR vs. Projected DYAR from Two-Year Model
with 394 Projected RB-Seasons from 2014 to 2021

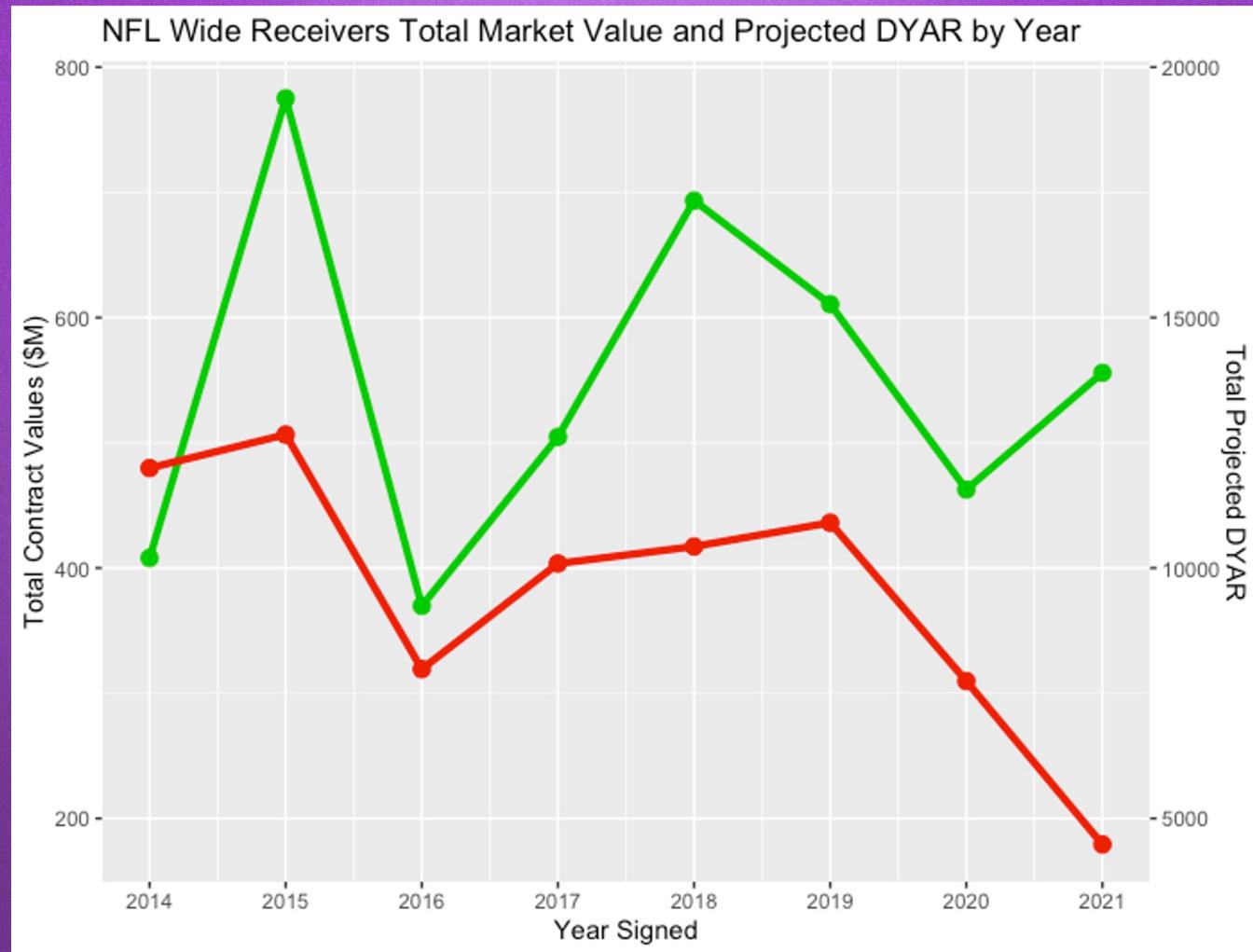


NFL Running Backs DYAR vs. Projected DYAR from Three-Year Model with 230 Projected RB-Seasons from 2015 to 2021

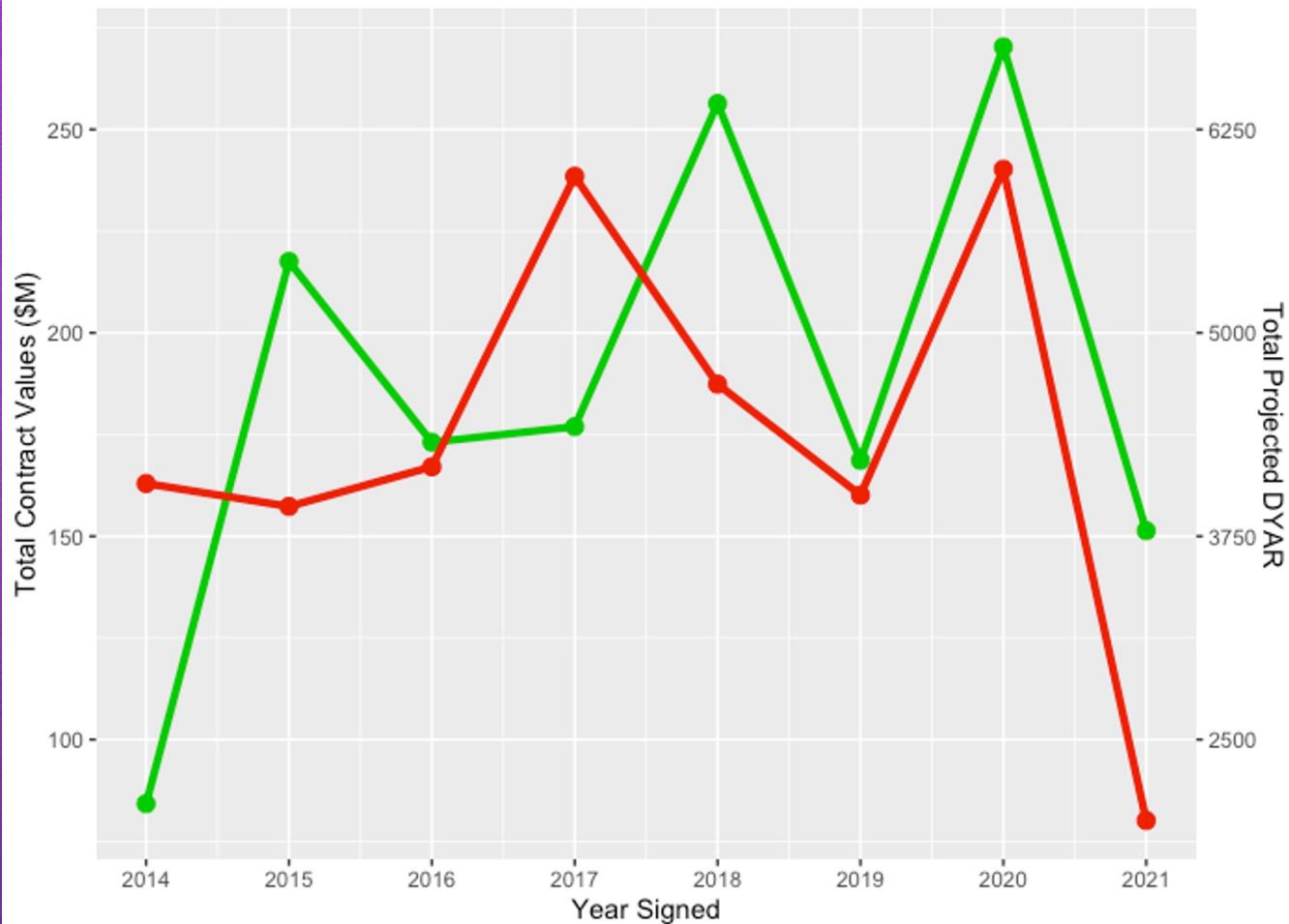


NFL Quarterbacks Total Market Value and Projected DYAR by Year





NFL Running Backs Total Market Value and Projected DYAR by Year



Dollar Valuation by Position

Position	\$ per 100 DYAR
Quarterbacks	\$4.3M
Wide Receivers	\$6.2M
Running Backs	\$4.5M

Projection Method

- Project each position separately
 - Played in '20 & '21 \Rightarrow two-year model
 - Played in '21 only \Rightarrow one-year model
- Since 2022 data is not full season:
 - Half actual DYAR
 - Half projected DYAR
- Two-year model for all remaining seasons
- Players who debut in '22 excluded

Running Back Value Overview

- “Running backs don’t matter”:
 - Not quite right or wrong
- Emphasis on early-career production
- Most second contracts become overpays
- Rushing and receiving flexibility

Running Back Assets: 6-10

Rank	Name	Age	Projected DYAR	Surplus
10	Tyler Allgeier	22	87*	N/A
9	Breece Hall	21	113*	N/A
8	Javonte Williams	22	312	\$9M
7	Antonio Gibson	24	241	\$10M
6	Rhamondre Stevenson	24	259	\$11M

5 AJ. Dillon



Age: 24

Guaranteed Money: \$2,254,505

DYAR: 307

Surplus: \$11.7M

#4 Khalil Herbert



Age: 24

Guaranteed Money: \$130,708

DYAR: 266

Surplus: \$12M

#3 Elijah Mitchell



Age: 24

Guaranteed Money: \$183,568

DYAR: 274

Surplus: \$12.3M

#2 Kenneth Gainwell



Age: 23

Guaranteed Money: \$335,528

DYAR: 281

Surplus: \$12.5M

#1 Jonathan Taylor



Age: 23

Guaranteed Money: \$4,219,798

DYAR: 416

Surplus: \$15M

Wide Receiver Value Overview

- Opportunities/Touches
- Rookie Contracts
- Market Value Outpacing
DYAR

Wide Receiver Assets: 6-10

Rank	Name	Age	Projected DYAR	Surplus
10	CeeDee Lamb	23	463	\$14.8M
9	Chase Claypool	24	296	\$15.2M
8	Brandon Aiyuk	24	452	\$15.6M
7	Darnell Mooney	25	257	\$15.7M
6	Michael Pittman	25	362	\$16.7M

#5 Gabe Davis



Age: 23

Guaranteed Money: \$699,380

Projected DYAR: 342

Surplus: \$20.6M

Key Stat: 15.7 ADOT

#4 Donovan Peoples-Jones



Age: 23

Guaranteed Money: \$186,608

Projected DYAR: 362

Surplus: \$22.3M

Key Stat: 11.3 YBC/R

#3 Tee Higgins



Age: 23

Guaranteed Money: \$5,882,518

Projected DYAR: 496

Surplus: \$25.0M

Key Stat: 7th in WAR per SIS

#2 Justin Jefferson



Age: 23

Guaranteed Money: \$13,122,805

Projected DYAR: 630

Surplus: \$26.1M

Key Stat: 1,277 receiving yards

#1 Amon-Ra St. Brown



Age: 23

Guaranteed Money: \$785,282

Projected DYAR: 470

Surplus: \$28.4M

Key Stat: 47 1st Downs

Quarterback Value Overview

- Largest contracts in the sport (with good reason)
- Elite productivity is worth top of market spending
- Rookie deal productivity is the golden goose
- Most high-level QBs are paid market value at minimum

Quarterback Assets: 7-10

- Note: Fields and Lawrence were ranked 16th and 15th by our model but their projection far outpaces career backups ahead of them like Nick Foles, Brian Hoyer, Colt McCoy, and Tyrod Taylor.

Rank	Name	Age	Projected DYAR	Surplus
10	Justin Fields	23	158	-\$12M
9	Trevor Lawrence	23	596	-\$11M
8	Jordan Love	24	577	\$13M
7	Davis Mills	24	422	\$17M

#6 Mac Jones

- 24 years old
- Projected DYAR: 1236.1
- Surplus Value: \$38.1 million
- Additional:
 - 2021: 18th in PA% and 49th in shotgun %
 - More meat on the bone?



#5 Joe Burrow

- 25 years old
- Projected DYAR: 1603.8
- Surplus Value: \$32.9 million
- Additional:
 - Since start of 2021 7th in EPA/play
 - 1st in Y/A



#4 Patrick Mahomes

- 27 years old
- Projected DYAR: 4228.6
- Surplus Value: \$42.4 million
- Additional:
 - 1st in EPA/play under pressure since start of 2021
 - Youngest QB ever to win a regular season MVP, a Super Bowl, and Super Bowl MVP
 - Largest contract in NFL history



#3 Tua Tagovailoa

- 24 years old
- Projected DYAR: 1672.2
- Surplus Value: \$42.4 million
- Additional:
 - 1st in EPA/play in 2022
 - 1st in EPA/play under pressure
 - 2nd in EPA/play since start of 2021



#2 Jalen Hurts

- 24 years old
- Projected DYAR: 1473.2
- Surplus Value: \$61.2 million
- Additional:
 - Fourth QB ever with a game of 150 yards rushing and passing
 - Leads all QBs in designed runs and EPA/per play on runs



#1 Justin Herbert

- 24 years old
- Projected DYAR: 2211.3
- Surplus Value: \$69.6 million
- Additional: Since start of 2021
 - 6th in EPA/play
 - 4th in short accuracy
 - 10th in medium accuracy
 - 13th in long accuracy



Valuation Conclusions

- Performance and return are most predictable for QBs
- RBs and WRs are far more dependent on outside factors
- WR pay is spiking leading to overpays league-wide
- Elite RB pay is untenable beyond a rookie contract



Limitations

- Incorrect NFL contract details
- Did not consider unguaranteed portions of contracts
- There is no “holy grail” statistic
 - Limitations of DYAR in our model
 - WAR only goes back to 2016
- Positional differences
- 2021 and 2022 rookie projections aren’t as reliable

THANK YOU!