Points Above Replacement (PAR)

2025 & 2025/26 Season Analysis

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Fitzpatrick	Shaqiri	Akinfeev	Hayakawa	Johansson	Ward	Beljo	Ferry	Binks	Salinas	Haaland	Fujii	Lindsay
+5.4	+4.2	+1.4	+5.5	+7.0	+3.7	+6.9	+3.6	+3.8	+8.9	+8.2	-1.0	+1.8

Küçük	Veerman	Thomasson	Yamal	Olise	Ferreira	Tzolis	Messi	Dimarco	Fernandes	Félix	Suárez	Katai
-1.4	+7.9	+6.3	+10.5	+11.2	+12.4	+12.8	+12.2	+10.6	+9.6	+11.3	+8.1	+10.7

Ronaldo	Vicente	Palmisani	Slegers	Dreyer	Devoy
+5.9	+12.1	+7.5	+6.3	+11.5	+6.8

Wing	McPake	Ciğerci	de Arrascaeta	Martín	Nygren	Eser	Payne	Quiñones	Mbappé	McTominay	Montiel	Piątkowski
+9.7	+9.0	+10.9	+10.3	+11.2	+7.4	-6.1	+1.1	+9.5	+6.4	+7.0	+3.2	+3.2

Armstrong	Schlotterbeck	Cloutier	Palmer	Song	Randall	Walker	Mofokeng	Magunagoitia	Mentu	Braga	Evjen	Irving
+6.4	+4.3	+2.8	-0.7	+6.4	+5.1	±0.0	+7.8	+5.1	+3.6	+4.7	+5.1	+2.0

In Summary... (1/2)

If you don't want to read all 40+ slides, here is the quick rundown...

Points Above Replacement (PAR)

The Idea

How much more/less valuable is Player X compared to a freely available replacement?

Football's equivalent of baseball's Wins Above Replacement (WAR) metric

WAR = wins a player adds over a free minor-league call-up



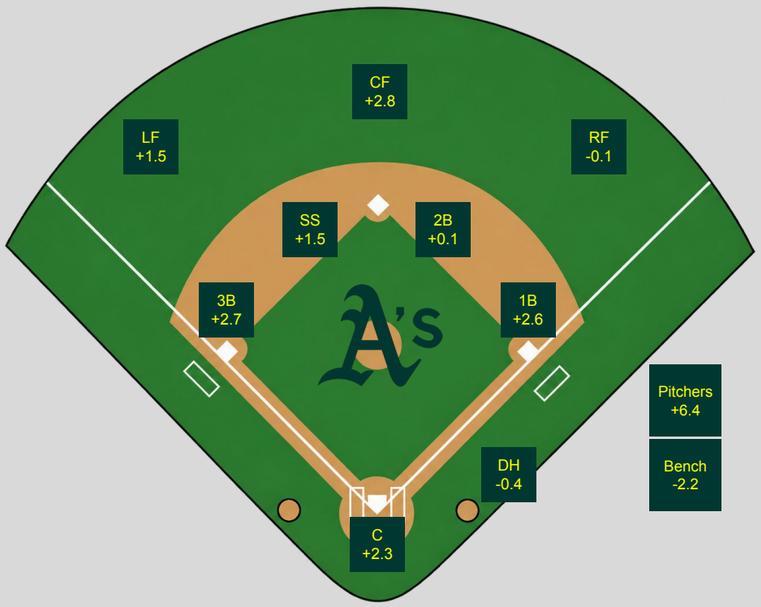
Ohtani	Baty	Hayes	Gyökeres
Elite superstar	Role player	Below replacement level	A Premier League striker...?
+6.6	+1.1	-1.3	±???

Team Value

Baseball's Wins Above Replacement values can be totalled to produce a team's expected wins above a team of replacement-level players

The 2026 Athletics won 64 games

Using WAR, they were expected to win 64.9



Replacement Team Expected Wins	47.7
2026 Athletics WAR	+17.2
Expected Wins	64.9
Actual Wins	64

Points Above Replacement (PAR) is how this will translate into football

$$PAR = (attack + defence - replacement) \times points\,per\,goal$$

In Summary... (2/2)

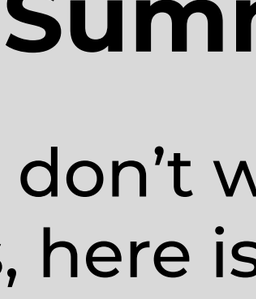
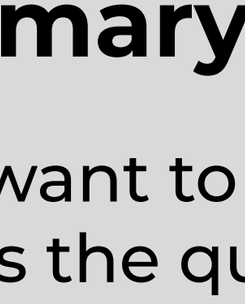
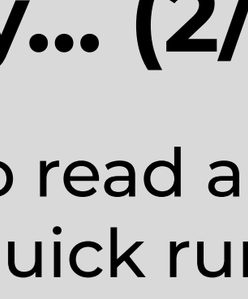
If you don't want to read all 40+ slides, here is the quick rundown...

Points Above Replacement (PAR)

Results

19,199 players · 938 teams
55 leagues · 2025 & 2025/26 seasons

Points Above Replacement (PAR) is the league points added vs a same-league replacement

			
Kane	**Laporte**	**Pezzella**	**Gyökeres**
Highest-rated Bundesliga striker	Reliable La Liga centre-back	Below Serie A replacement level	10th highest-rated Premier League striker
+8.6	**+1.1**	**-0.4**	**+3.0**

Two additional metrics provide extra information

- **PARper90** shows quality over quantity by dividing PAR by 90s played
- **PARadj** scales PAR to Premier League level

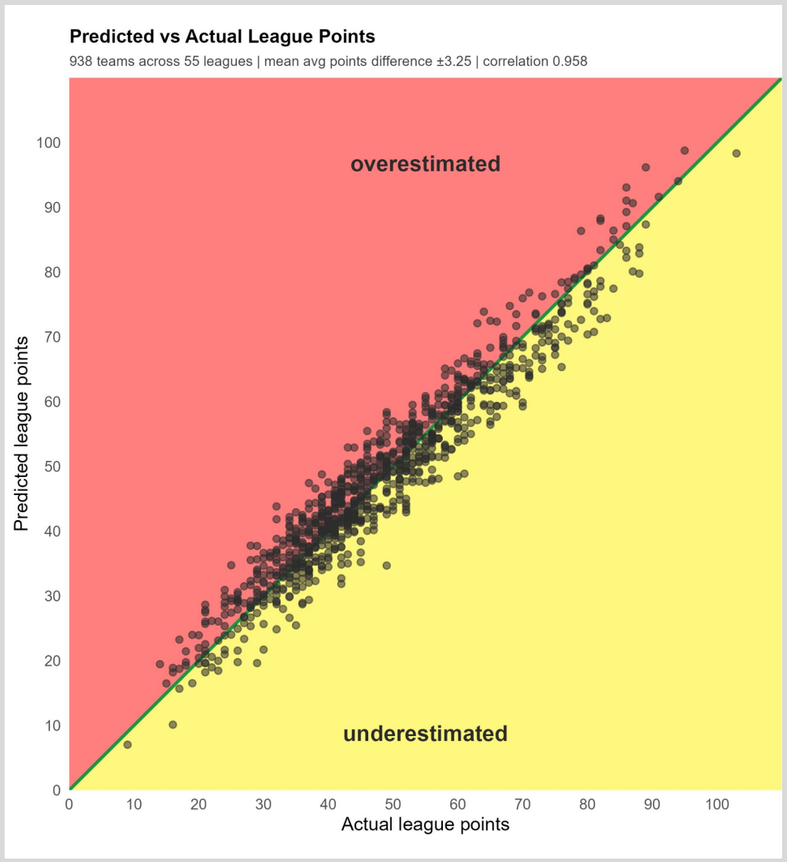
Validation

Totalling PAR values from players on the same team will produce a team's expected points above replacement. Add this on top of the expected points from a team of replacement-level players and we have the total expected points for that team

With this, we'd expect Birmingham City to have earned 64.0 points in 2025/26... which they did



English Championship Replacement Team Expected Points	21.0
Birmingham City PAR (2025/26)	+43.0
Expected Points	64.0
Actual Points	64



Average gap between predicted points and actual points: ±3.25

Correlation with league points: 0.958

PAR ranking correlation with FotMob player ratings: 0.78

Full 40+ slides showing methodology, validation, results, and limitations →

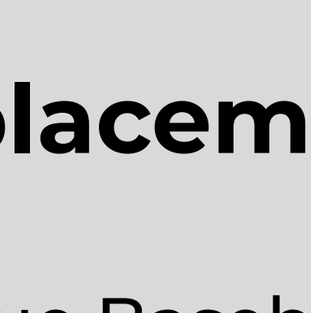
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1. The Inspiration: Wins Above Replacement

What is Wins Above Replacement?

- Player valuation metric used in Major League Baseball to summarise a player's total contributions to their team in one statistic, adding together batting, base-running, fielding, and pitching
  - Practically asks **"How many extra wins does Player X add to, or cost, their team compared to a freely available replacement-level player?"**

				
Pete Crow-Armstrong Outfielder	Jacob Misiorowski Pitcher	Cal Raleigh Catcher	George Springer Designated Hitter	Noelvi Marte 3rd Base/Outfielder
+10.6 WAR MLB Rank: 1st	**+6.6 WAR** MLB Rank: 4th	**+1.9 WAR** MLB Rank: 223rd	**+0.9 WAR** MLB Rank: 401st	**-1.4 WAR** MLB Rank: 1,472nd (Joint last)

Data: FanGraphs 2026 WAR Leaderboard (as of 25 Oct 2026)

What is ‘Replacement Level’?

- The comparison baseline used in WAR is a replacement-level player
  - This is generally defined as the performance level of a quickly available free agent or an easy-to-sign minor-league player

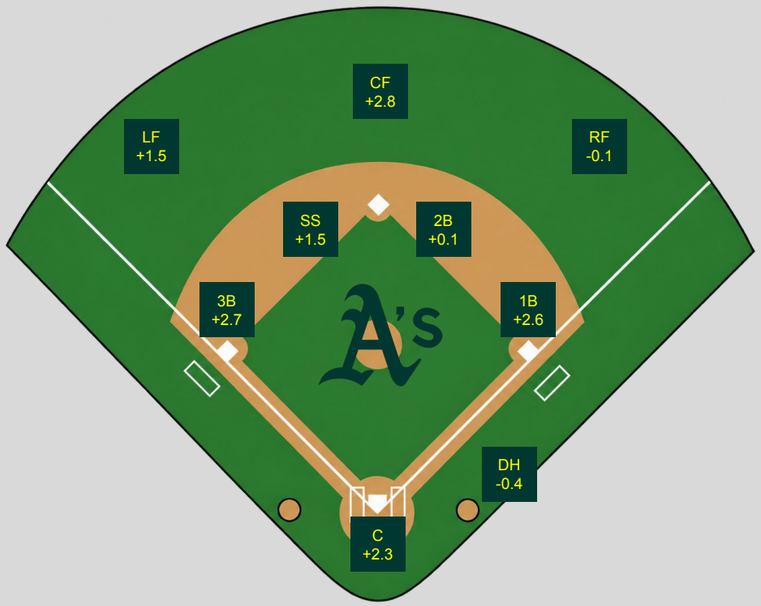
- Why not use the average player as the baseline?
  - Let's say the New York Mets are hit with an injury crisis across many of their regular starters
  - They don’t just casually keep league-average players on the bench as backup for all the affected positions
  - The MLB average player would be expected to start games and be paid much more than a benchwarmer
  - The Mets instead have hundreds of minor-league options on affiliate teams who can be called up at no cost
  - This is true for all MLB teams: rich or poor, good or bad

- The replacement-level player is **the level of player that teams never have to search beneath**

MLB Team Wins Above Replacement

- A team formed entirely of replacement-level players would be expected to win around 47.7 games out of 162 (29.4%)
  - This leaves 114 games (70.6%) to be won/lost above/below the replacement baseline

- If we add together individual player WAR values from players on the same team, we can estimate how many games a team should win
  - For example, the 2026 Athletics totalled +17.2 WAR
  - If we add the expected 47.7 wins from a replacement-level team, we would expect them to have won around 65 games
  - They ended the season with 64 wins, just 0.9 off the estimate



Regular Starters	+13.0 WAR
Bench Players	-2.2 WAR
Pitchers	+6.4 WAR
Total	+17.2 WAR

Replacement Team Expected Wins	47.7
2026 Athletics WAR	+17.2
Expected Wins	64.9
Actual Wins	64

Data: Athletics WAR leaderboard
Replacement level expected wins

2. Translation into Football

Baseball ≠ Football

- Baseball is inherently a discrete, stop-start sport
  - Every pitch, swing, hit, and out has a defined beginning and end

- Football is not like this; it is fluid and continuous
  - Events such as passes, tackles, and shots link directly to the next, without a reset, and do not happen in isolation

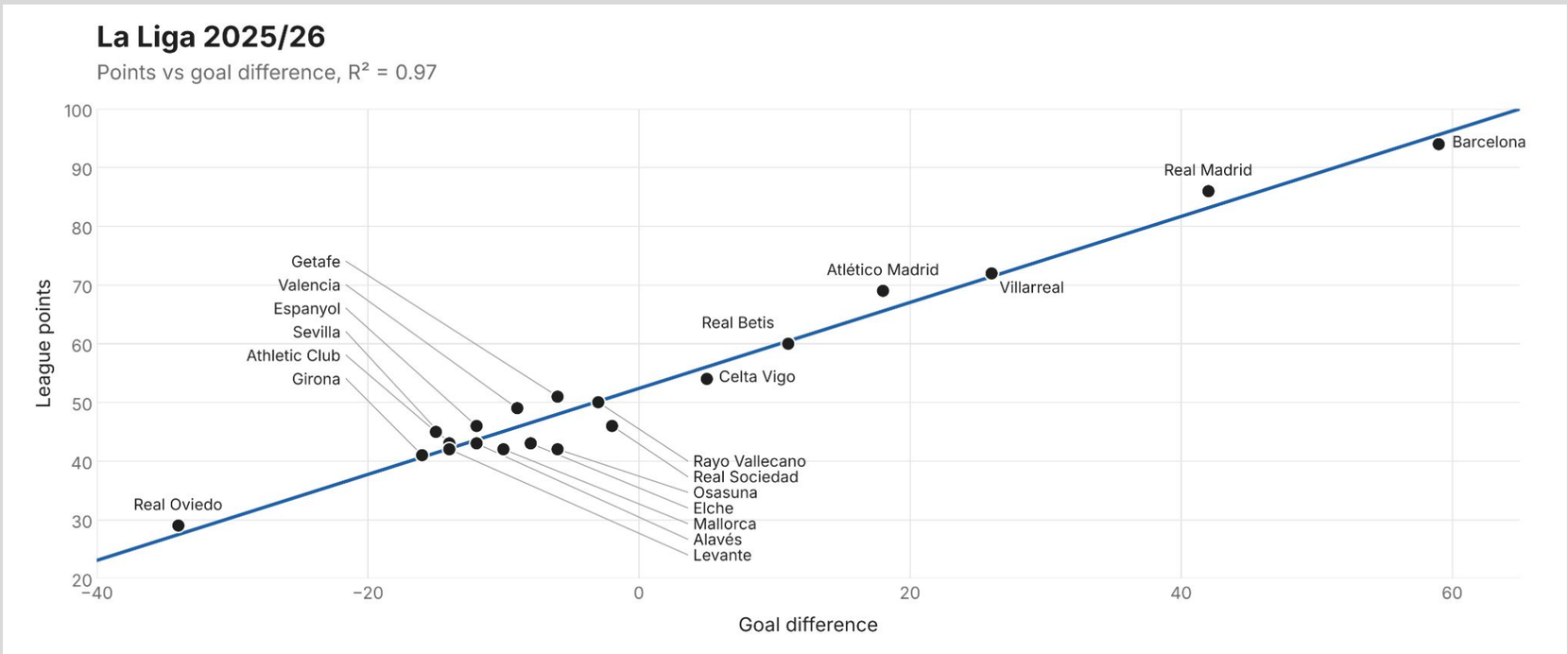
- Because footballing actions are chaotic and continuous, football is more difficult to measure with traditional statistics than baseball
  - In baseball, 10 runs roughly equals +1 Win Above Replacement
  - For football, each +1 goal difference is worth ~0.6 league points. The hard part is deciding which players deserve the credit and how to share it.

- Baseball has no draws, so every game is a win or a loss
  - Football (typically) awards 3 points for a win, 1 point for a draw, and 0 points for a loss, which complicates things further

How to Translate WAR into Football

- League points become the currency, replacing wins
  - Operating solely on a win-loss record isn’t possible due to draws

- Goals actually convert to points really well
  - Goal difference (GD) explains 84–96% of the variation in league points (averaging across five seasons)
  - One goal of goal difference is worth ~0.6 league points (ranges from 0.48 to 0.81 depending on the league, labelled as pts/GD)
  - Expected points = (total league table points ÷ number of teams) + pts/GD × GD

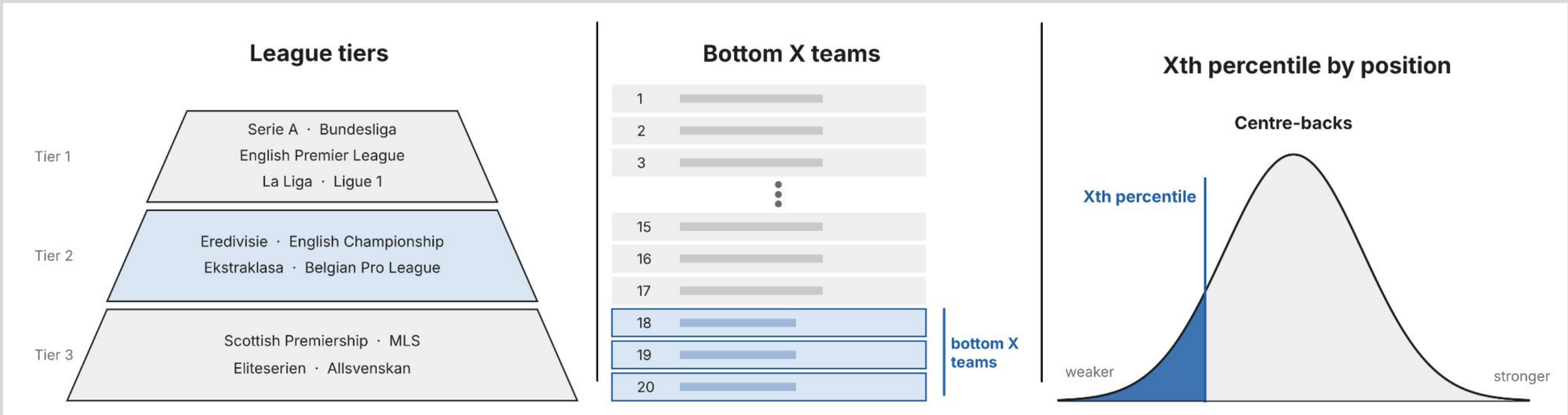


Replacement Level in Football

- Since there are no minor league farm systems in football, a different way of defining replacement level is needed

- A few different options are available:
  - A league tier system where each league has a set of leagues below defined as their replacement level
  - The average performance level of the bottom X teams
  - The performance level of the X^{th} percentile player at each position

- A team of replacement-level players would generally be expected to finish below the lowest-ranked team in each league



Previous Work: American Soccer Analysis

- Going to WAR for Points Above Replacement in Soccer (Dave Laidig, 2019)
  - On-ball actions were valued by how they changed a team's goal threat, based on historical outcomes from similar positions
  - Replacement level was based on the average performance for players on the MLS minimum salary or less for each position
  - Each +1 goal difference was worth 0.662 points (0.906 correlation)
  - PAR = 0.662 × (player value − replacement value)

- Results:
  - A team of replacement-level players would total ~32 league points, close to the bottom-three average of ~30
  - Goalkeepers dominated the leaderboard
  - Replacement-level centre-backs rated slightly higher than the MLS average centre-back

AMERICAN SOCCER ANALYSIS

3. How This Points Above Replacement Model Works

Model Choices

- 55 leagues from FotMob, using only statistics available in every league
  - Not every league had advanced stats (such as xG), so more basic stats were used

- Replacement level = 5th percentile
  - Set separately for each position in each league
  - 8th, 10th and 15th were also tested, but 5th percentile gave the most realistic replacement-level team

- Five seasons of league tables were used to estimate and average out each league's points-per-goal rate
  - League points are calculated purely from results (3 for a win, 1 for a draw) so all leagues share a common points system
  - Point deductions to specific teams are ignored

- Outfielders need a minimum of 450 minutes played to receive a PAR value; the threshold for goalkeepers is 630 minutes
  - Players below this are grouped per team and score ~1.5 PAR

Calculation

- Every player is valued in goals first, then converted to league points

- PAR = (Attack + Defence − Replacement) × points per goal
  - Attack: team goals scored that the player's actions are credited for (goals, assists, shots on target, big chances created, penalties won)
  - Defence: share of goals their team *didn't* concede, shared out by minutes, defensive actions, and a position adjustment
  - Replacement: what a 5th-percentile player in the same position and league would have produced with the same minutes
  - Points per goal: how many league points each goal is worth per league, calculated from a range of five seasons

- Mimics baseball Wins Above Replacement formula

$$\text{fWAR} = \frac{\text{Runs}_{batting} + \text{Runs}_{baserunning} + \text{Runs}_{fielding} + \text{Adj}_{position} + \text{Adj}_{league} + \text{Runs}_{replacement}}{\text{Runs Per Win}}$$

Formula: FanGraphs WAR

Attack

- Attack blends what each player actually produced with what the underlying numbers say they should produce
  - 60% is made up of actual output (goals and assists)
  - The remaining 40% is underlying output
    - Shot on target ≈ 0.23 goals
    - Big chance created ≈ 0.24 goals
    - Penalty won ≈ 0.51 goals

- Chances created, crosses, dribbles, long balls, and touches added no extra value

- Attacking credit is scaled league by league, so each league’s attacking credit adds up to the goals its teams actually scored

Defence

- Defence is measured at team level first, because conceding is a team outcome

- A baseline team concedes the average of the bottom two teams' goals per game + a margin
  - Margin = how many fewer goals a team of 1st-percentile attackers would score than the bottom two teams

- Team credit = (baseline − actual goals conceded) × points per goal
  - Goalkeeper's share is taken first

- This is then shared between outfield players by minutes, weighted defensive actions, and position adjustments

- Using the 'Goals Conceded On Pitch' stat, each player is given an on-pitch adjustment

What Attack and Defence Are Worth

- A goal prevented is worth 1.18 goals scored
  - This was set by tuning and testing which balance best reproduces league tables

- Every goal is converted at the league's points-per-goal rate
  - For example...
    - 0.55 points in the Swiss Super League
    - 0.61 points in the Scottish Premiership
    - 0.62 points in the English Premier League
    - 0.77 points in the Spanish Segunda División
    - 0.81 points in the K-League

- Attack and defence are valued in the same currency, so a centre-back's tackles and a winger's assists sit on the same scale

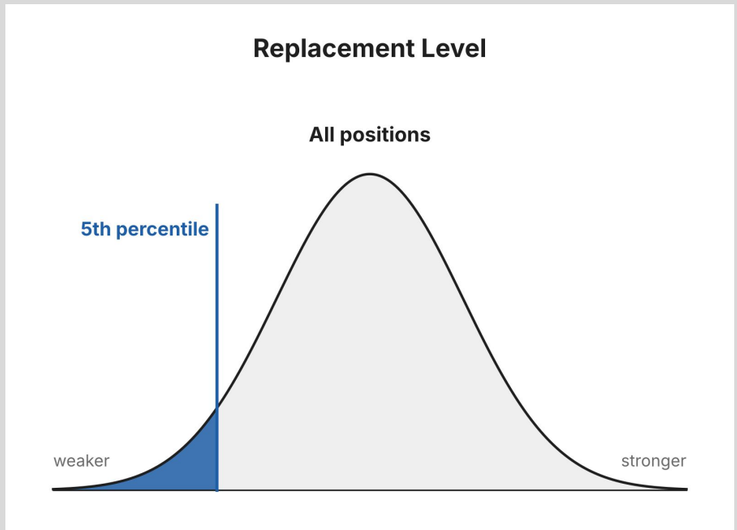
- Attackers still top the rankings
  - Attacking output varies far more between players than defensive output does

Replacement Level and Adjustments

- Replacement level is set as the 5th-percentile player at each position in each league
  - Every player is compared with what the replacement would have done with the same amount of minutes played
  - A replacement-level player scores 0 PAR

- Positional adjustments
  - Strikers are scaled down so they don’t crowd the rankings
  - Other positions are scaled up

- An adjustment per league is used for calibration so team totals best match real league tables



Goalkeepers

- Keepers are valued on shot-stopping
  - Goals Saved Above Average = shots on target faced × (1 - league save rate) - goals conceded
  - Shrunk towards zero for keepers with few minutes, since short spells are noisy

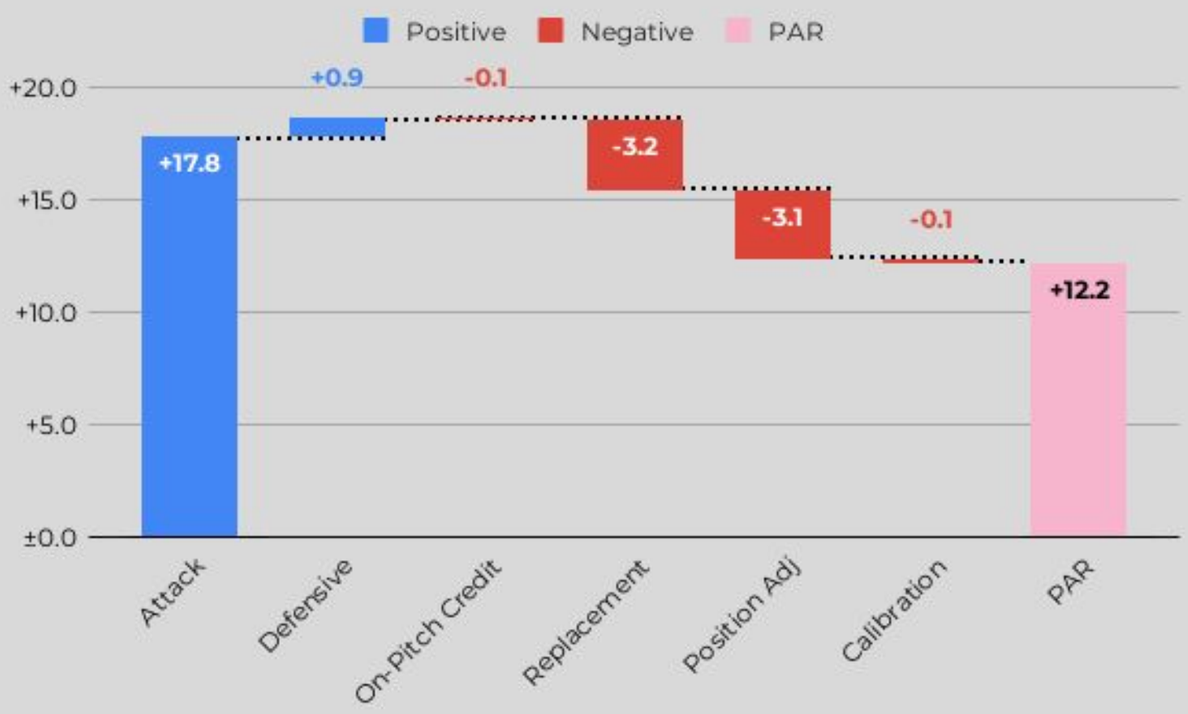
- Replacement level is the typical keeper at the bottom two clubs

- Their share is taken off the team’s defensive credit before outfielders are valued

Lorenzo Palmisani (Frosinone, Italian Serie B)	
Shots on target faced	174 (140 saves + 34 conceded)
League save rate	69.5%
Expected to concede	174 × (1 − 0.695) = 53.07
Actually conceded	34
Goals Saved Above Average in league points	(53.07 − 34) × points per goal = +13.94

PAR Scoring Example: Lionel Messi (ST)

- Attack: 35 goals (1 penalty) + 23 assists, blended with underlying stats → 27.3 goals × 0.651 points per goal = **+17.78**
- Defensive actions (his share of Inter Miami's defensive credit): **+0.85**
- On-pitch credit (Inter Miami conceded slightly more with him): **-0.07**
- Replacement: what a 5th-percentile MLS striker would still produce in the same minutes played (0.172 goals per 90 × 28.3): **-3.16**
- Positional adjustment: **-3.07**
- League calibration: **-0.11**
- Result: **+12.2** Points Above Replacement (3rd highest of 19,199 players)



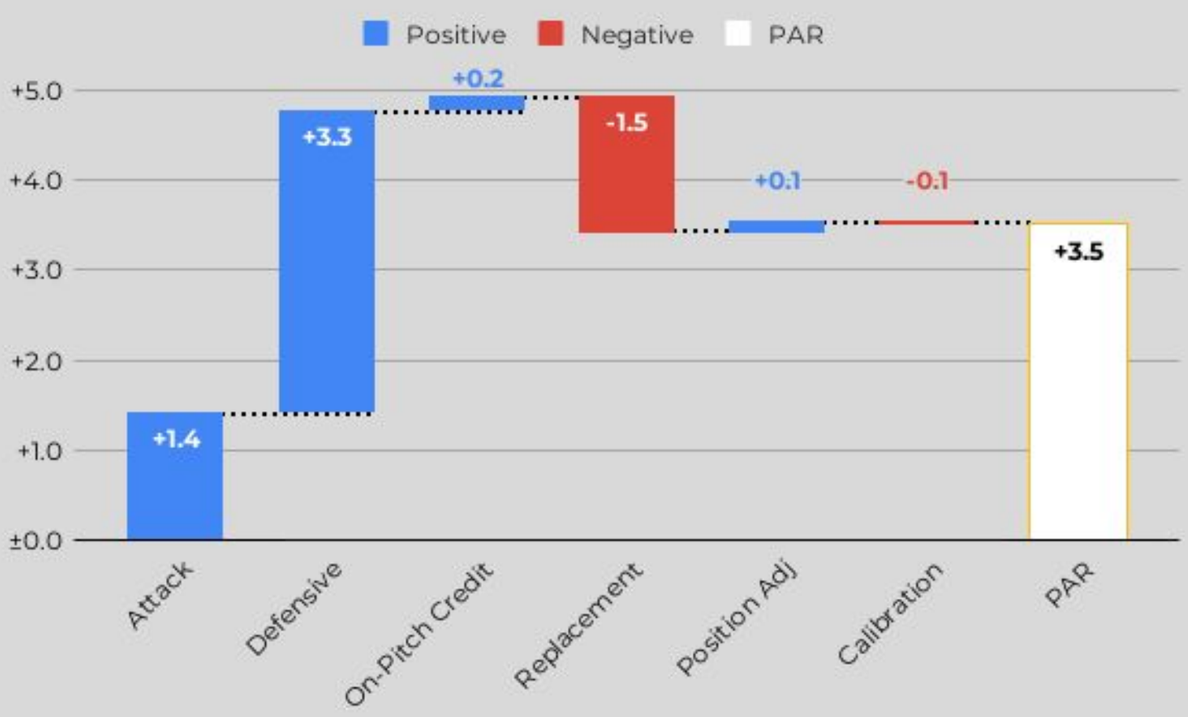


Messi

+12.2

PAR Scoring Example: Dean Huijsen (CB)

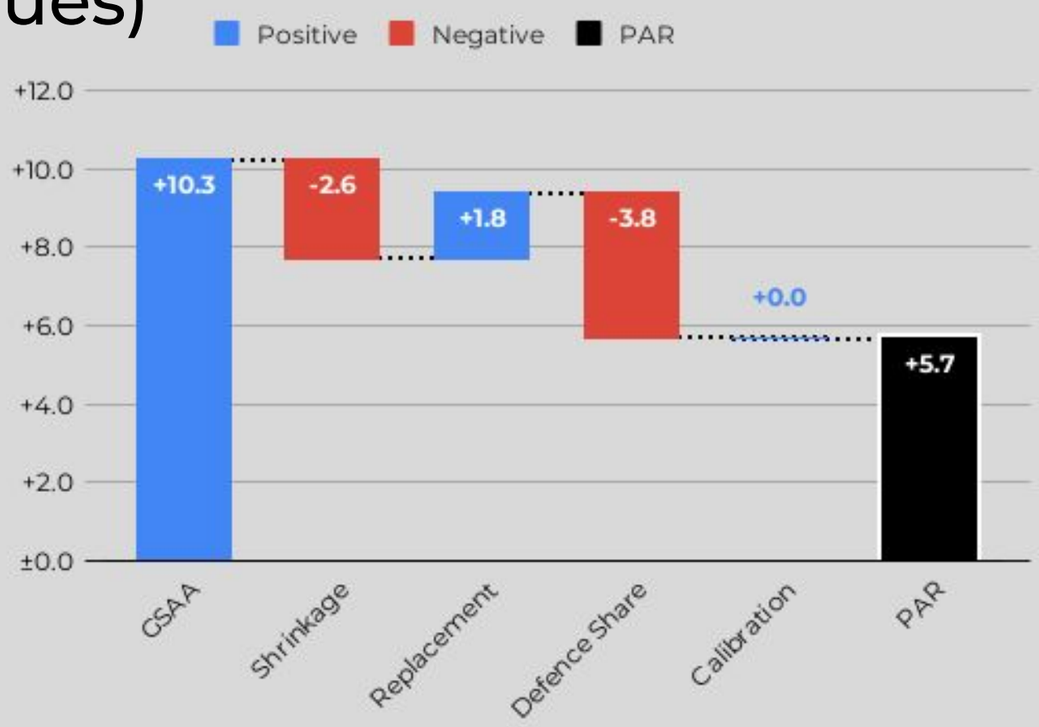
- Attack: 2 goals + 2 assists, blended with underlying stats → 2.05 goals × 0.698 points per goal = **+1.43**
- Defensive actions (his share of Real Madrid's defensive credit): **+3.34**
- On-pitch credit (Real Madrid conceded fewer with him): **+0.18**
- Replacement: what a 5th-percentile La Liga centre-back would still produce in the same minutes played (0.097 goals per 90 × 22.6): **-1.53**
- Positional adjustment: **+0.14**
- League calibration: **-0.06**
- Result: **+3.5** Points Above Replacement (3rd highest La Liga CB)





PAR Scoring Example: Hervé Koffi (GK)

- Goals Saved Above Average: faced 159 shots on target, Ligue 1's save rate was 67.2% so he'd be expected to concede 52.1, but only conceded 36 → 16.1 goals × 0.637 points per goal = **+10.28**
- GK Shrinkage (to reduce the effect of luck): **-2.60**
- Replacement (a typical bottom-two GK, across all leagues, concedes 2.8 extra goals in the same minutes): **+1.76**
- Defence share (40% of the credit goes to Angers' defence): **-3.78**
- League calibration: **+0.04**
- Result: **+5.7** Points Above Replacement (highest PAR of any GK in Europe's top 5 leagues)





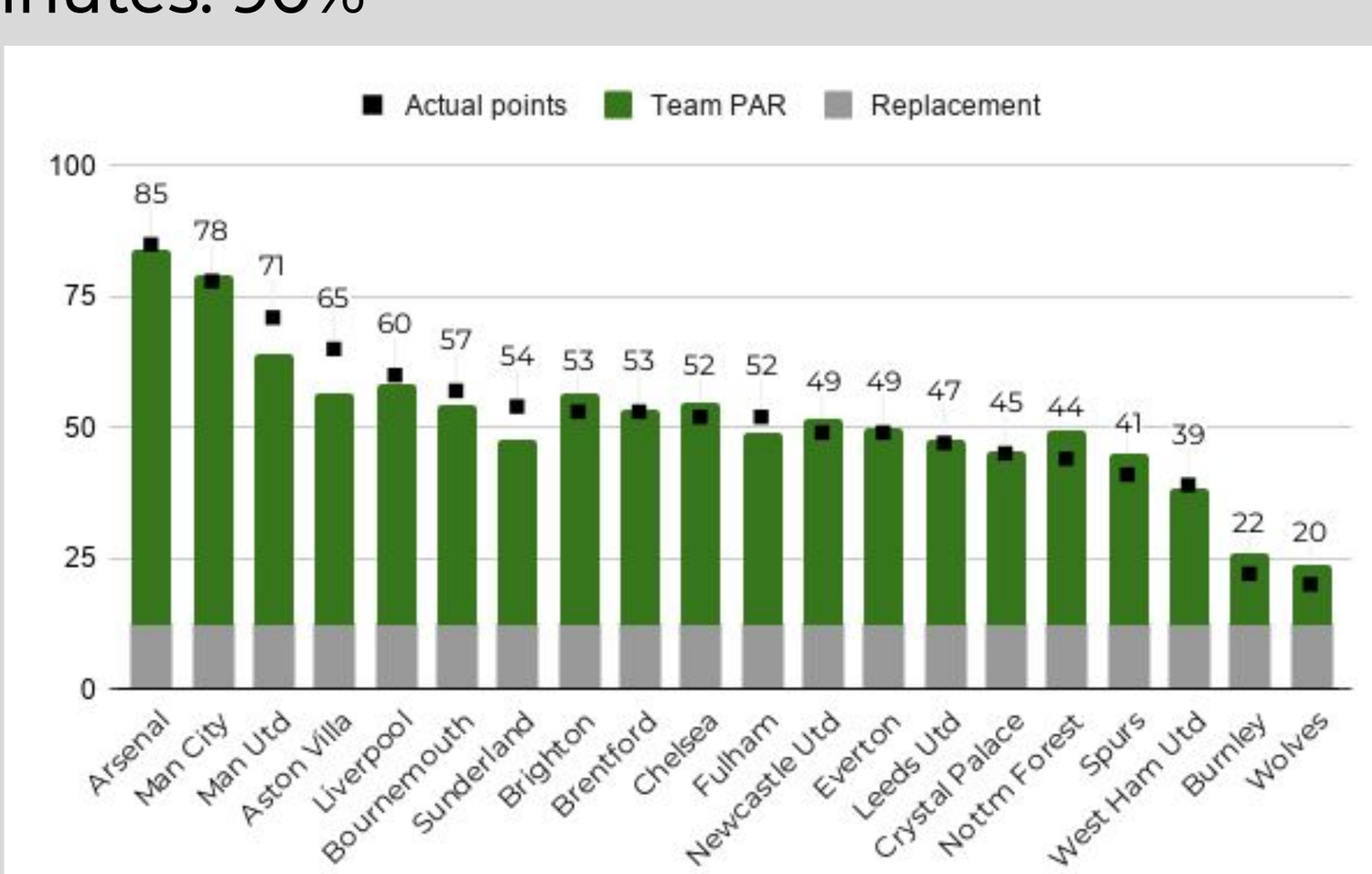
Koffi

+5.7

The PAR Pool

- 2025/26 English Premier League had 1,036 league points in total
  - 20 replacement-level teams would take 246 (12.3 each)
  - The remaining 790 league points are what players earned above (or lost below) replacement level

- How those 789 points are split:
  - Outfielders with 450+ minutes: 90%
  - Goalkeepers: 4%
  - Mid-season movers: 3%
  - Rest of squad: 3%



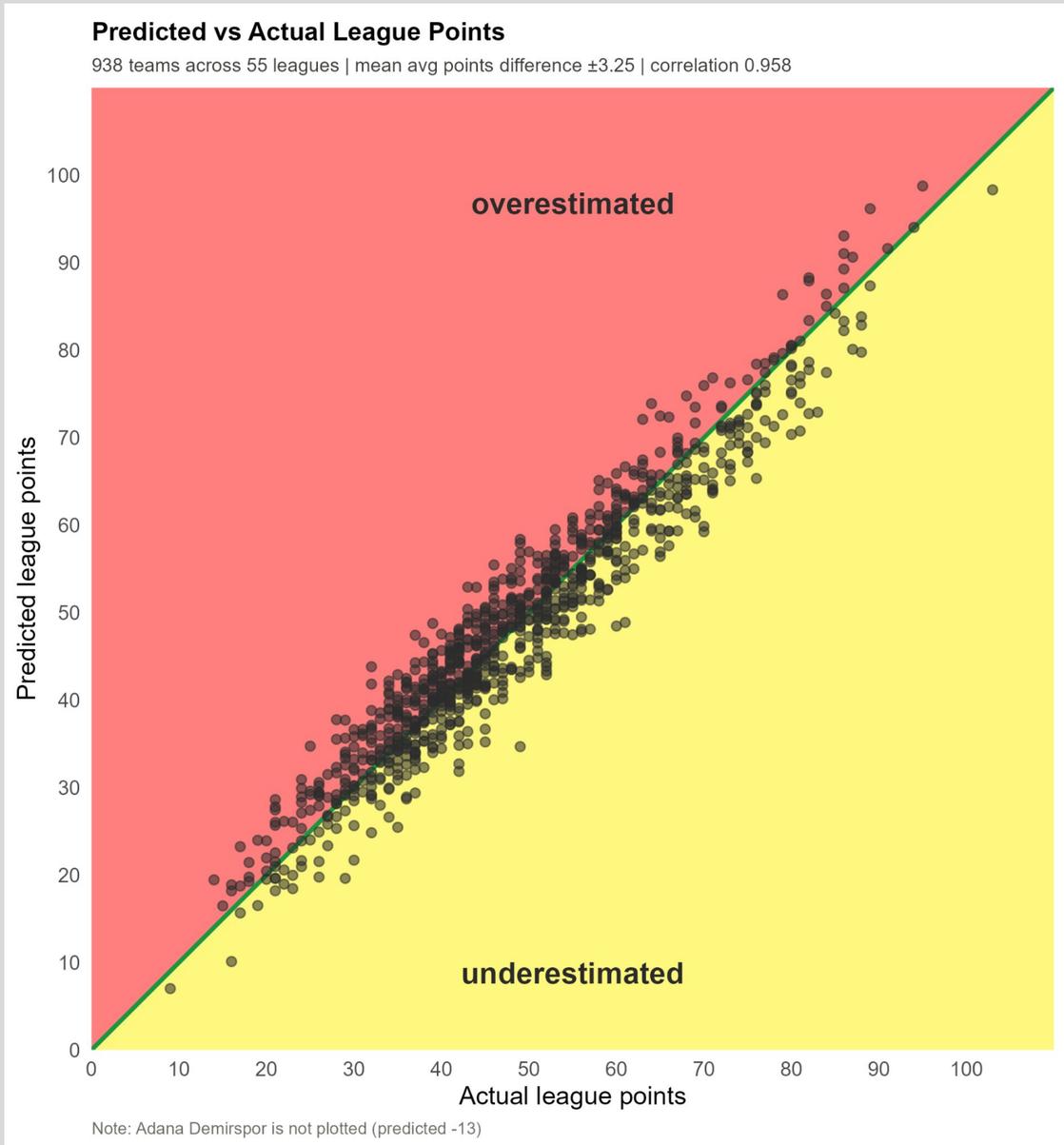
4. Model Validation

Does Team PAR Add Up?

- Team PAR + a replacement-level team's points should roughly equal the real points total (this mirrors baseball WAR)
  - Barcelona: 76.6 + 17.4 = 94.0 (actual 94)
  - Arsenal: 71.9 + 12.3 = 84.2 (actual 85)
  - PSG: 66.8 + 11.6 = 78.4 (actual 76)

- Across 938 teams in 55 leagues:
  - Average error: ±3.25 points
  - Correlation: 0.958

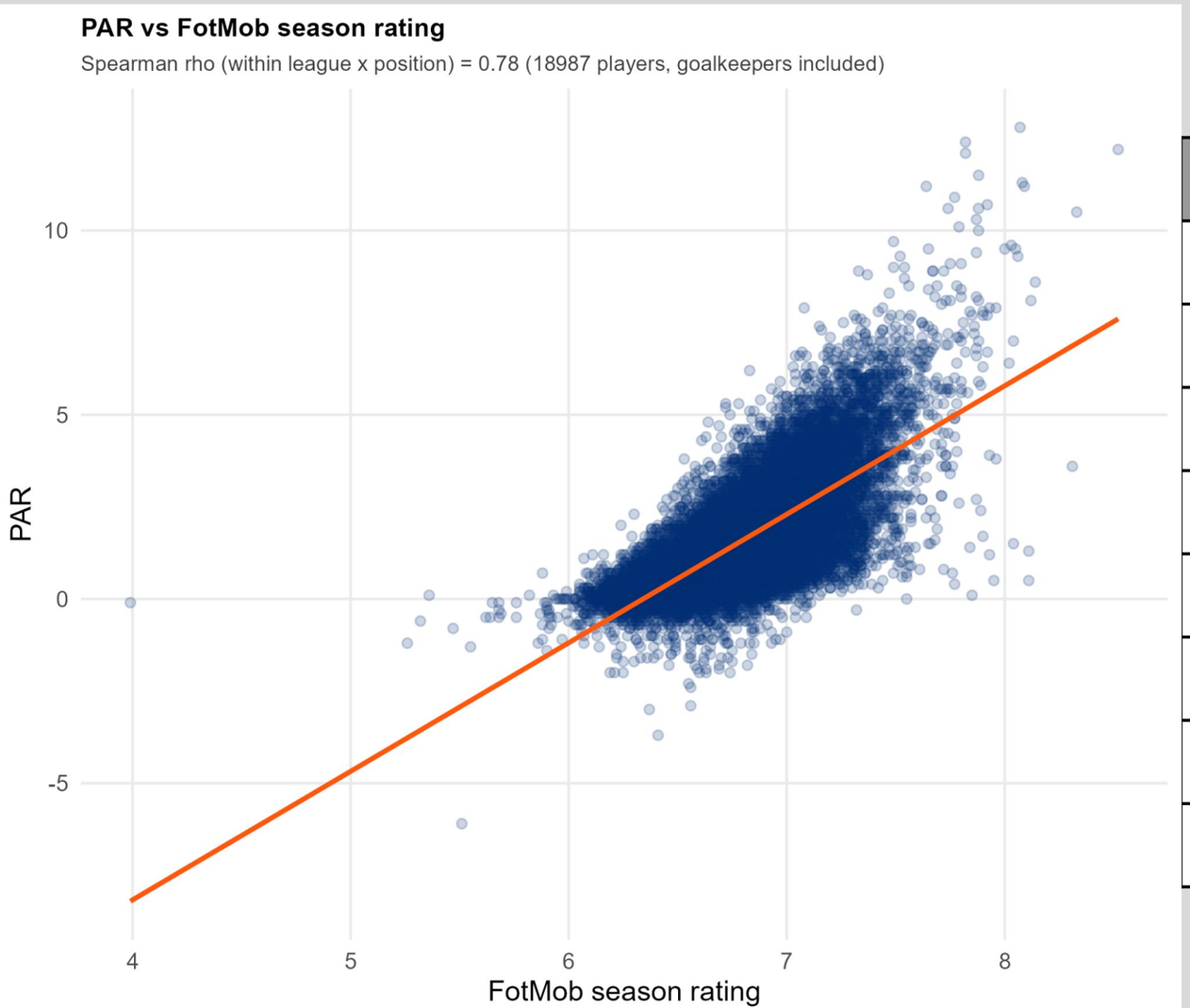
- The model predicted Adana Demirspor (Turkish 1.Lig) to finish on −13 points (they actually ended the season with −57 points due to financial deductions)
  - They played the season largely with an inexperienced academy squad, which the model output shows



Does PAR Rank Players Sensibly?

- The PAR values were compared against FotMob season ratings

- Rank agreement (Spearman's ρ) measured within each league and position (18,987 players): **0.78**
  - The relationship is strong in every position (0.75–0.80)



Position	Spearman's ρ
Strikers	0.80
Full Backs	0.79
Centre Backs	0.79
Wingers	0.78
Defensive Mids	0.77
Attacking Mids	0.76
Goalkeepers	0.75
Central Mids	0.75

Some Sense Checks

- Replacement level does feel like replacement level
  - A replacement-level team takes ~14 points per 38 games, below the worst real team in 54 of 55 leagues

- Replacement is set within each position per league, so an MLS centre-back is only compared to other MLS centre-backs

- Each position takes a realistic share of every league's top 200
  - PAR leans slightly more towards attackers than FotMob does, due to attackers having more influence on goal difference

Position group	FotMob top 200	PAR top 200	Difference
Defence (FB/CB)	89	75	-14
Midfield (DM/CM/AM)	60	60	0
Attack (W/ST)	51	65	+14

5. Results and Cross-League Calibration

PAR Top 10

#	Player	Club, League	PAR
1	Christos Tzolis	Club Brugge, Belgian Pro League	+12.8
2	Evander Ferreira	Cincinnati, MLS	+12.4
3	Lionel Messi	Inter Miami, MLS	+12.2
4	Iñigo Vicente	Racing Santander, Spanish Segunda División	+12.1
5	Anders Dreyer	San Diego, MLS	+11.5
6	João Félix	Al-Nassr, Saudi Pro League	+11.3
=7	Michael Olise	Bayern München, German Bundesliga	+11.2
=7	Andrés Martín	Racing Santander, Spanish Segunda División	+11.2
9	Tolcay Ciğerci	Energie Cottbus, German 3.Liga	+10.9
10	Aleksandar Katai	Crvena Zvezda, Serbian Super Liga	+10.7

- Only one of the top 10 plays in a top-five European league
  - Was Michael Olise less valuable than three MLS players…?
  - How does +12.8 league points in Belgium’s Pro League convert to the English Premier League…?

Comparison Across Leagues

- PAR measures value against each player's own league
  - But a point isn't equally hard to earn in every league

- A league strength weight is used to estimate how a player's output would survive a move to the English Premier League
  - Estimated from how players' FotMob ratings changed after they moved league (careers of 25,104 players since 2021)
    - English Premier League 1.00
    - German Bundesliga 0.72
    - Belgian Pro League 0.44
    - Scottish Premiership 0.35
    - Veikkausliiga 0.16

- Adjusted PAR (PARadj) = PAR × strength weight
  - For example, Tzolis' +12.8 PAR in the Belgian Pro League is worth +5.6 PAR when adjusted to English Premier League level

PARadj Top 10

#	Player	Club, League	PAR	PARadj
1	Bruno Fernandes	Manchester Utd, English Premier League	+9.6	+9.6
=2	Federico Dimarco	Internazionale, Italian Serie A	+10.6	+8.2
=2	Lamine Yamal	Barcelona, La Liga	+10.5	+8.2
=2	Erling Haaland	Manchester City, English Premier League	+8.2	+8.2
5	Michael Olise	Bayern München, German Bundesliga	+11.2	+8.0
6	Declan Rice	Arsenal, English Premier League	+7.6	+7.6
7	Antoine Semenyo	Multiple Clubs, English Premier League	+7.3	+7.3
8	Nico Paz	Como, Italian Serie A	+8.9	+6.9
9	Bukayo Saka	Arsenal, English Premier League	+6.7	+6.7
10	Luis Díaz	Bayern München, German Bundesliga	+9.1	+6.5

- Tzolis drops to 22nd overall
- Messi and Ferreira fall to joint 31st
- Katai moves from 10th to 426th due to Serbian Super Liga strength

Scoring Players With Low-ish Minutes

- PAR rewards season-long availability
  - But what about impact subs, or players who didn't play a full season due to injuries or squad rotation?

- PARper90 = PAR ÷ 90s played
  - A regular starter adds ~0.10 points per 90

- Best overall: Ferre Slegers with +0.73 PARper90
  - Across just 775 minutes (8.6 90s), he scored 8 goals and assisted 4 for SK Beveren in the Belgian Challenger Pro League
  - His total PAR was +6.3

- PSG's Ousmane Dembélé played just 1,062 Ligue 1 minutes (11.8 90s), during which he only produced +3.7 PAR (32nd overall in Ligue 1)
  - But his +0.32 PARper90 is elite (4th overall in Ligue 1)

PARper90 Top 10

#	Player	Club, League	90s	PARper90
=1	Lionel Messi	Inter Miami, MLS	28.3	+0.43
=1	Michael Olise	Bayern München, German Bundesliga	25.7	+0.43
=1	Aleksandar Katai	Crvena Zvezda, Serbian Super Liga	24.8	+0.43
4	Lamine Yamal	Barcelona, La Liga	25.2	+0.42
5	Giorgian de Arrascaeta	Flamengo, Brazilian Serie A	26.3	+0.39
6	Christos Tzolis	Club Brugge, Belgian Pro League	34.1	+0.38
=7	Patrick Berg	Bodø/Glimt, Eliteserien	25.5	+0.37
=7	Zlatko Tripić	Viking FK, Eliteserien	21.5	+0.37
=7	Luka Stojković	Dinamo Zagreb, Hrvatska Nogometna Liga	20.2	+0.37
=10	Evander Ferreira	Cincinnati, MLS	34.2	+0.36
=10	Denis Bouanga	Los Angeles FC, MLS	29.9	+0.36
=10	Niall Reid-Stephen	South Georgia Tormenta, USL League One	22.0	+0.36

- (List is made up of players with a minimum of 1,800 mins played and league play-offs are not included)
- With PARper90, quality is rewarded, not quantity
- Katai played 3.5 fewer 90s than Messi, yet produced equal PARper90

Best Performing Goalkeepers

#	Player	Club, League	90s	PAR
1	Lorenzo Palmisani	Frosinone, Italian Serie B	37.9	+7.5
2	Marcelo Rangel	Remo, Brazilian Serie B	36.1	+6.9
3	Grant Smith	Bromley, English League Two	43.0	+6.7

#	Player	Club, League	90s	PARper90
1	Lorenzo Palmisani	Frosinone, Italian Serie B	37.9	+0.20
=2	Marcelo Rangel	Remo, Brazilian Serie B	36.1	+0.19
=2	Simon Ngapandouetnbu	Montpellier, French Ligue 2	31.0	+0.19
=2	Hervé Koffi	Angers, French Ligue 1	29.5	+0.19
=2	Kiany Vroman	K. Lierse, Belgian Challenger Pro League	21.5	+0.19

#	Player	Club, League	90s	PARadj
1	David Soria	Getafe, La Liga	38.0	+3.9
2	Mile Svilar	Roma, Italian Serie A	38.0	+3.7
3	Hervé Koffi	Angers, French Ligue 1	29.5	+3.6

- (Tables use a minimum of 1,800 mins played)

Replacement-Level Players

- 407 outfielders and 42 goalkeepers scored ±0.0 PAR
  - These players added zero extra value to their team's league points total compared to the replacement-level player for the same position and league
- Below is a handpicked selection of those 449 players

POS	Player	Club, League	90s	PAR
CB	Jack Shepherd	Barnsley, English League One	35.1	±0.0
FB	Kyle Walker	Burnley, English Premier League	34.4	±0.0
GK	Finn Dahmen	FC Augsburg, German Bundesliga	34.0	±0.0
CB	Danny Wilson	Livingston, Scottish Premiership	29.8	±0.0
CM	Izan Merino	Málaga, Spanish Segunda División	29.5	±0.0
ST	Dragos Huiban	Metaloglobus, Romanian Liga I	28.2	±0.0
AM	Dominik Žák	KFC Komárno, Slovakian 1.Liga	26.1	±0.0
DM	Tchê Tchê	Vasco da Gama, Brazilian Serie A	22.3	±0.0
W	Harry Amass	Multiple Clubs, English Championship	20.9	±0.0

- (List is made up of players with a minimum of 1,800 mins played)

Below Replacement-Level Players

- 685 outfielders and 313 goalkeepers scored negative PAR
  - These players performed worse than the replacement-level player for the same position and league
- Below is a handpicked selection of those 998 players

POS	Player	Club, League	90s	PAR
GK	Murat Eser	Adana Demirspor, Turkish 1.Lig	25.5	-6.1
GK	George Gavrilaș	Metaloglobus, Romanian Liga I	35.5	-3.7
GK	Elvis Chipezeze	Magesi, South African PSL	28.0	-2.4
W	Kürsat Küçük	Adana Demirspor, Turkish 1.Lig	26.6	-1.4
CB	Ali Fidan	Adana Demirspor, Turkish 1.Lig	28.7	-1.3
AM	Tomoya Fujii	Shonan Bellmare, J-League	23.0	-1.0
CB	Liam Palmer	Sheffield Wednesday, English Championship	41.6	-0.7
GK	Guglielmo Vicario	Tottenham Hotspur, English Premier League	31.0	-0.7
ST	Khiry Shelton	Sporting Kansas City, MLS	20.1	-0.7
CB	Maxime Estève	Burnley, English Premier League	32.6	-0.2

- (List is made up of players with a minimum of 1,800 mins played)

6. Limitations and Next Steps

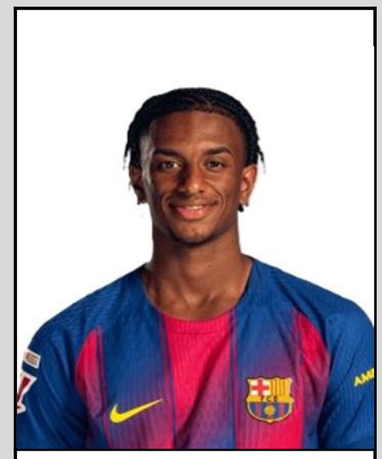
Limitation 1: The Data

- Basic box-score data only
  - Passing value, off-ball movement, pressing, and positioning were all unmeasured in this model

- No advanced stats (xG, xA, xGOT, sprints, distance covered etc)
  - Leaving xG out keeps all 55 leagues comparable, at the cost of more noise from finishing luck

- Positions were set using FotMob's primary position per player
  - Players who switch roles mid-season or play somewhere other than their listed position are valued against the wrong peer group

- Data gaps
  - About 2% of players were left out because their data records were incomplete or broken



Balde

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Limitation 2: The Model

- It is based on only one season of data
  - There is no test of whether this exact approach holds up in other league seasons (for now)

- Defensive credit is partly team credit
  - A centre-back in a dominant side inherits some of his teammates' work

- Modelling choices shape the results
  - The 5th-percentile replacement level, the 1.18 defence weight and the striker correction were all tuned rather than fixed

- League strength is one number per league
  - It's anchored to the Premier League, which supplies 46 of the top 100 players by PARadj
  - It treats every position the same, even though a winger's output may translate between leagues differently from a centre-back's

Next Steps

- Richer data would likely improve scoring accuracy and precision
  - Tracking data would help value off-ball work, which would be a benefit to defenders

- Re-run once new seasons are complete
  - This would help verify if the current model tuning choices are season-dependent

- League strength weights by position
  - Only one number is used to convert a player from their league to the English Premier League, without ever considering their playing position

- Add market value data
  - ‘PAR per £million’ would call attention to players who produce above their value
  - It would also highlight which players are overpriced

Slide Sources

- Slides 2 & 6, Data: FanGraphs 2026 WAR Leaderboard (as of 25 Oct 2026)
  - https://www.fangraphs.com/leaders/war?sortcol=6&sortdir=desc&lg=&teamid=&season=2026
- Slides 2 & 8, Data: Athletics WAR leaderboard
  - https://www.fangraphs.com/leaders/war?sortcol=6&sortdir=desc&lg=&teamid=10&seasonstart=2026&seasonend=2026
- Slides 2 & 8, Replacement level expected wins
  - https://blogs.fangraphs.com/unifying-replacement-level/
- Slide 13, Going to WAR for Points Above Replacement in Soccer (Dave Laidig, 2019)
  - https://www.americansocceranalysis.com/home/2019/1/11/points-above-replacement
- Slide 16, Formula: FanGraphs WAR
  - https://en.wikipedia.org/wiki/Wins_above_replacement#FanGraphs
- FotMob player data and league statistics for 2025 and 2025/26 seasons
  - https://www.fotmob.com

Leagues Used

1) A-League	19) English League One	37) Liga Portugal
2) Allsvenskan	20) English League Two	38) MLS
3) Austrian Bundesliga	21) English Premier League	39) Romanian Liga I
4) Belgian Challenger Pro League	22) Eredivisie	40) Russian Premier League
5) Belgian Pro League	23) French Ligue 1	41) Saudi Pro League
6) Brazilian Serie A	24) French Ligue 2	42) Scottish Championship
7) Brazilian Serie B	25) German 2.Bundesliga	43) Scottish Premiership
8) Canadian Premier League	26) German 3.Liga	44) Serbian Super Liga
9) Chilean Liga de Primera	27) German Bundesliga	45) Slovakian 1.Liga
10) Chinese Super League	28) Greek Super League	46) South African PSL
11) Czech 1.Liga	29) Hrvatska Nogometna Liga	47) Spanish Segunda División
12) Danish 1.Division	30) Italian Serie A	48) Superligaen
13) Ecuadorian Serie A	31) Italian Serie B	49) Swiss Challenge League
14) Eerste Divisie	32) J-League	50) Swiss Super League
15) Egyptian Premier League	33) K-League	51) Turkish 1.Lig
16) Ekstraklasa	34) La Liga	52) Turkish Super Lig
17) Eliteserien	35) League of Ireland	53) USL Championship
18) English Championship	36) Liga Argentina	54) USL League One
		55) Veikkausliiga