

Ranking players according to their match experience: the CIES Football Observatory method

Drs Raffaele Poli, Loïc Ravenel and Roger Besson

1. Introduction

This Monthly Report presents the method developed by the CIES Football Observatory to rank players globally by combining their playing time with the sporting level of the teams for which they played or the competitions they participated in. The so-called “experience capital” method is particularly useful to scout young players. Indeed, with similar talent, regularly fielded players from a young age are better prepared for a successful career.

The method is exemplified by considering the minutes played by footballers in 401 club and national team competitions worldwide from the 1st January to the 1st December 2021, which allows us to highlight the most promising fresh talents. Among the latter, one finds already well-established players such as Pedri González from Barcelona, but also less well-known footballers who have all the requisites needed to pursue a successful top-flight career.

2. Methodology

The first step in the experience capital method consists of calculating a coefficient of sporting force for each club worldwide, with which then weighting minutes played by footballers. To do this, we first calculate the leagues' sporting level by considering the results obtained by their members in the international club competitions (Champions League, Europa League, Copa Libertadores, etc.) over the past five years.

A weighting is then applied to the league according to the level of competition at national scale (100% for the top division, 50% for the second, 25% for the third, etc.). A point scored in a top division league thus has a weighting equivalent to two points obtained in a second division one. Despite some differences between countries, this ratio corresponds to that globally observed in domestic cups for fixtures opposing teams of different levels.

The leagues of different confederations are then ranked in a single group by taking into account the average sporting force coefficient of the 50 best European clubs where the players of teams from a confederation have migrated during the two years prior to the establishment of the ranking. This coefficient is applied as a maximum value for the top-ranked league in each confederation.

As a matter of example, a coefficient of 0.75 is attributed to the best league of the CONMEBOL, the Brazilian Serie A, corresponding to the average sporting force coefficient of the 50 best European clubs where footballers from CONMEBOL leagues departed since December 2019. The coefficients for the other leagues of the same confederation are then fixed based on this maximum value according to the infra-confederation calculation method detailed above.

A sporting coefficient specific to each club is then calculated by weighting the sporting force coefficient of the leagues of belonging by domestic league results obtained by teams over the past 365 days. Thus, for example, on the 1st December 2021, the values for Premier League teams ranged from a maximum of 2.35 for Manchester City to a minimum of 0.89 for Newcastle United.

Figure 1: top 20 leagues according to CIES Football Observatory's sporting force coefficient (01/12/2021)

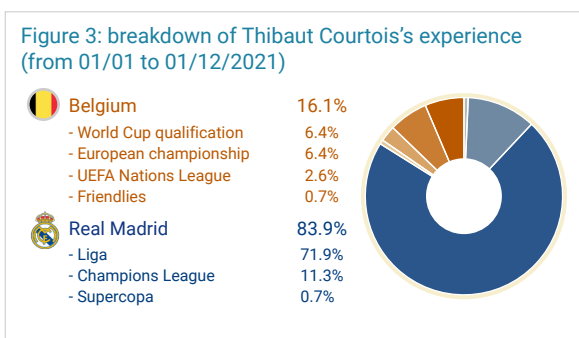
1		Spain	1.000
2		England	0.971
3		Germany	0.903
4		Italy	0.871
5		Brazil	0.750
6		France	0.748
7		Argentina	0.714
8		Portugal	0.702
9		Russia	0.698
10		Mexico	0.667
11		Ukraine	0.610
12		The Netherlands	0.599
13		Belgium	0.594
14		Colombia	0.584
15		Turkey	0.575
16		Paraguay	0.573
17		USA	0.562
18		Ecuador	0.556
19		Chile	0.534
20		Greece	0.531

Figure 2: sporting force coefficient of English Premier League clubs (01/12/2021)

1		Manchester City	2.346
2		Chelsea FC	1.875
3		Liverpool FC	1.827
4		Manchester United	1.783
5		Arsenal FC	1.707
6		West Ham United	1.707
7		Leicester City	1.586
8		Tottenham Hotspur	1.478
9		Everton FC	1.394
10		Leeds United	1.370
11		Aston Villa	1.314
12		Brighton & Hove	1.178
13		Wolverhampton FC	1.154
14		Crystal Palace	1.130
15		Brentford FC	1.038
16		Burnley FC	1.033
17		Watford FC	0.996
18		Southampton FC	0.962
19		Norwich City	0.952
20		Newcastle United	0.889

To measure players' experience capital, each domestic league minute played is weighted according to the sporting coefficient of footballers' employer clubs at the time the matches took place. For the minutes outside of national leagues, a fixed weighting factor was established according to the prestige and stage of the competition, with a maximum for the World Cup final for national teams and the UEFA Champions League final for international club competitions.

By way of illustration, Thibaut Courtois played 5,580 minutes between the 1st January and the 1st December 2021, for an experience capital of 116.9, of which 71.9% comes from minutes played with Real Madrid in the Spanish Liga, 11.6% from playing time in the UEFA Champions League, 0.7% from minutes in the Spanish Super Cup and the remaining 16.1% from his employment with the Belgian national A-team.



3. Application

To exemplify the method, we present distinct rankings for outfield players and goalkeepers. The highest values for the latter are generally higher than for the former. Subject to less physical effort, goalkeepers are indeed less likely to be substituted, either during the match or from fixture to fixture.

As far as outfield players are concerned, over the first eleven months of 2021, the highest experience capital value was recorded for the Real Madrid and previously Bayern Munich Austrian centre back David Alaba (108.0). Two other central defenders complete the podium: Rúben Dias (Manchester City and Portugal) and Milan Škriniar (Internazionale and Slovakia). Karim Benzema (6th overall) heads up the rankings for forwards.

At the top of the rankings for goalkeepers, we find the last bastion of Real Madrid and the Belgian national team's defence Thibaut Courtois, who totals the highest score of any position (116.9). Three other goalkeepers have accumulated an experience capital of over 100: Jan Oblak (Atlético de Madrid and Slovenia), Manuel Neuer (Bayern Munich and Germany) as well as Ederson Moraes (Manchester City and Brazil).

Figure 4: outfield players with the most experience capital (from 01/01 to 01/12/2021)

1	David Alaba / Real Madrid (ESP) [Current club]	108.0
2	Rúben Dias / Manchester City (ENG)	106.0
3	Milan Škriniar / Internazionale (ITA)	105.5
4	Carlos Casemiro / Real Madrid (ESP)	105.1
5	Joshua Kimmich / Bayern München (GER)	102.9
6	Karim Benzema / Real Madrid (ESP)	100.9
7	Giovanni Di Lorenzo / SSC Napoli (ITA)	99.9
8	Frenkie de Jong / FC Barcelona (ESP)	99.8
9	Marcelo Brozović / Internazionale (ITA)	98.7
10	Nicolò Barella / Internazionale (ITA)	98.2
11	Bruno Fernandes / Manchester United (ENG)	98.0
12	Koke Resurrección / Atlético Madrid (ESP)	97.3
13	Sergio Busquets / FC Barcelona (ESP)	96.6
14	Antoine Griezmann / Atlético Madrid (ESP)	95.8
15	Kylian Mbappé / Paris St-Germain (FRA)	95.5
16	Bernardo Silva / Manchester City (ENG)	93.9
17	Robert Lewandowski / Bayern München (GER)	93.8
18	Harry Maguire / Manchester United (ENG)	92.2
19	Jules Koundé / Sevilla FC (ESP)	91.7
20	Memphis Depay / FC Barcelona (ESP)	91.5

Figure 5: goalkeepers with the most experience capital (from 01/01 to 01/12/2021)

1	Thibaut Courtois / Real Madrid (ESP) [Current club]	116.9
2	Jan Oblak / Atlético Madrid (ESP)	109.9
3	Manuel Neuer / Bayern München (GER)	107.8
4	Ederson Moraes / Manchester City (ENG)	101.8
5	Éverton Marques / CA Mineiro (BRA)	99.5
6	Gianluigi Donnarumma / Paris St-Germain (FRA)	96.6
7	Kasper Schmeichel / Leicester City (ENG)	95.7
8	Yassine Bounou / Sevilla FC (ESP)	91.0
9	Hugo Lloris / Tottenham Hotspur (ENG)	89.1
10	Marc-André ter Stegen / FC Barcelona (ESP)	88.9
11	Samir Handanović / Internazionale (ITA)	88.2
12	Dominik Livaković / Dinamo Zagreb (CRO)	88.1
13	Fernando Muslera / Galatasaray SK (TUR)	86.4
14	Wojciech Szczęsny / Juventus FC (ITA)	86.4
15	Marcos Felipe / Fluminense FC (BRA)	85.4
16	Tiago Volpi / São Paulo FC (BRA)	83.6
17	Guillermo Ochoa / CF América (MEX)	82.6
18	Alisson Becker / Liverpool FC (ENG)	81.4
19	Péter Gulácsi / RB Leipzig (GER)	81.3
20	Édouard Mendy / Chelsea FC (ENG)	80.0

The highest experience capital for outfield players born in 2001 was measured for the centre back Jurriën Timber. On the 2nd June 2021, the Ajax player also celebrated his first cap with the Dutch national A-team. The Brazilian Yuri Alberto (SC Internacional) is ranked second, just ahead of another striker, the Belgian Charles De Ketelaere (Club Brugge). For goalkeepers, Ersin Destanoğlu (Beşiktaş) ranks ahead of Anatoliy Trubin (Shakhtar Donetsk).

Figure 6: outfield players born in 2001 with the most experience capital (from 01/01 to 01/12/2021)

1	Jurriën Timber / AFC Ajax (NED) [Current club]	75.0	■
2	Yuri Alberto / SC Internacional (BRA)	66.1	■
3	Charles De Ketelaere / Club Brugge (BEL)	63.8	■
4	Matheus Martinelli / Fluminense FC (BRA)	62.2	■
5	Agustin Álvarez / Peñarol Montevideo (URU)	61.7	■
6	Benoît Badiashile / AS Monaco (FRA)	60.2	■
.	Mason Greenwood / Manchester United (ENG)	60.2	■
.	Bukayo Saka / Arsenal FC (ENG)	60.2	■
9	Odilon Kossounou / Bayer Leverkusen (GER)	60.1	■
10	Jairo Quinteros / Club Bolívar (BOL)	55.1	■
11	William Saliba / Olympique Marseille (FRA)	54.9	■
12	Thiago Almada / Vélez Sarsfield (ARG)	54.5	■
13	Gonçalo Inácio / Sporting CP (POR)	54.3	■
14	Danilo dos Santos / SE Palmeiras (BRA)	53.8	■
15	Nicolas Seiwald / RB Salzburg (AUT)	52.2	■
16	Eric García / FC Barcelona (ESP)	49.4	■
17	Luiz Henrique / Fluminense FC (BRA)	48.9	■
18	Myron Boadu / AS Monaco (FRA)	48.7	■
19	Leon Flach / Philadelphia Union (MLS)	47.8	■
20	Enzo Fernández / River Plate (ARG)	45.5	■

Figure 7: goalkeepers born in 2001 with the most experience capital (from 01/01 to 01/12/2021)

1	Ersin Destanoğlu / Beşiktaş JK (TUR) [Current club]	64.5	■
2	Anatoliy Trubin / Shakhtar Donetsk (UKR)	56.1	■
3	Luiz Júnior / FC Famalicão (POR)	32.4	■
4	David Ochoa / Real Salt Lake (MLS)	26.4	■
5	Vitali Botnar / Torpedo Moskva (RUS/2)	25.9	■
6	Vítězslav Jaros / St Patrick's Athletic (IRL)	24.8	■
7	Cezary Miszta / Legia Warszawa (POL)	21.4	■
8	Guillaume Dietsch / RFC Seraing (BEL)	19.9	■
9	Omer Niron / H. Ramat HaSharon (ISR/2)	19.5	■
10	David Odumosu / Drogheda United (IRL)	18.1	■
11	Lucão Galdino / CR Vasco da Gama (BRA/2)	15.9	■
12	Josh Griffiths / Lincoln City (ENG/3)	14.7	■
13	Christos Mandas / Atromitos FC (GRE)	13.8	■
14	João Paulo / Associação Chapecoense (BRA)	13.7	■
15	Jokull Andersson / Morecambe FC (ENG/3)	12.6	■
16	Renato Josipović / NK Bravo (SVN)	12.2	■
17	John Puiskamp / Sporting KC (MLS)	11.7	■
18	Zihao Huang / NJ City (CHN/2)	10.6	■
19	Vladimir Rusanov / PFK Ludogorets II (BUL/2)	10.2	■
.	Elia Caprile / Aurora Pro Patria 1919 (ITA/3)	10.2	■

Three footballers stand out at the top of the rankings for outfield players born in 2002: Ryan Gravenberch (Ajax and The Netherlands), Ilya Zabarnyi (Dynamo Kyiv and Ukraine), as well as Pedri González (Barcelona and Spain). As for goalkeepers, Maarten Vandevoordt (Genk and U21 Belgium) is ahead of the Bulgarian neo-international Svetoslav Vutsov (Slavia Sofia).

Figure 8: outfield players born in 2002 with the most experience capital (from 01/01 to 01/12/2021)

1	Ryan Gravenberch / AFC Ajax (NED) [Current club]	80.1	■
2	Ilya Zabarnyi / Dynamo Kyiv (UKR)	78.7	■
3	Pedri González / FC Barcelona (ESP)	68.1	■
4	Nuno Mendes / Paris St-Germain (FRA)	65.2	■
5	Adam Hložek / Sparta Praha (CZE)	57.8	■
.	Joško Gvardiol / RB Leipzig (GER)	57.8	■
7	Piero Hincapié / Bayer Leverkusen (GER)	57.7	■
8	Renan da Silva / SE Palmeiras (BRA)	47.6	■
9	Karim Adeyemi / RB Salzburg (AUT)	45.6	■
10	Victor Kristiansen / FC København (DEN)	45.3	■
11	Bruno Praxedes / RB Bragantino (BRA)	44.8	■
12	Alan Velasco / CA Independiente (ARG)	44.0	■
13	Irakli Azarovi / Dinamo Batumi (GEO)	43.9	■
14	Omar Campos / Santos Laguna (MEX)	43.7	■
15	Lucas Calegari / Fluminense FC (BRA)	42.5	■
16	Luka Sučić / RB Salzburg (AUT)	42.1	■
.	Octavian Popescu / FCSB (ROM)	42.1	■
18	Gabriel Pirani / Santos FC (BRA)	41.3	■
19	Eduardo Camavinga / Real Madrid (ESP)	41.0	■
20	Eric Martel / Austria Wien (AUT)	40.9	■

Figure 9: goalkeepers born in 2002 with the most experience capital (from 01/01 to 01/12/2021)

1	Maarten Vandevoordt / KRC Genk (BEL)	55.8	■
2	Svetoslav Vutsov / Slavia Sofia (BUL)	31.2	■
3	Doğan Alemdar / Kayserispor (TUR)	24.9	■
4	Gavin Bazunu / Portsmouth FC (ENG/3)	24.6	■
5	Adam Stejskal / FC Liefering (AUT/2)	21.5	■
6	Michal Kukučka / AS Trenčín (SVK)	19.9	■
7	Lubomír Belko / MŠK Žilina (SVK)	17.0	■
8	Otto Hindrich / CFR Cluj (ROM)	12.6	■
9	Mikolaj Biegański / Wisła Kraków (POL)	12.1	■
10	Oliver Dovin / Hammarby IF (SWE)	12.0	■
11	Zion Suzuki / Urawa Reds (JPN)	9.9	■
12	Ilia Shalamanov-Trenkov / Litex Lovech (BUL/2)	9.3	■
13	Bart Verbruggen / RSC Anderlecht (BEL)	7.7	■
14	Filip Samurović / FK Mačva Šabac (SRB/2)	7.4	■
15	Hannes Sveijer / IK Sirius (SWE)	7.3	■
16	Efehan Kaptan / Eskişehirspor (TUR/2)	7.2	■
17	Ruslan Neshcheret / Dynamo Kyiv (UKR)	7.0	■
18	James Trafford / Accrington Stanley (ENG/3)	6.9	■
19	Emmanuel Ogura / FC Nordsjælland (DEN)	6.7	■
.	Samuel Soares / SL Benfica B (POR/2)	6.7	■

For footballers born in 2003 or after, the top trio is made up of Jude Bellingham (Borussia Dortmund and England), Fabricio Díaz (Liverpool Montevideo) and Florian Wirtz (Bayer Leverkusen and Germany). Two players born in 2004 are in the top 10: the Brazilian Kaiky (Santos) and the Paraguayan Julio Enciso (Club Libertad). For goalkeepers, the Polishman Xavier Dziekoński (Jagiellonia Bialystok) outranks the Belarus Andrey Kudravets (BATE Borisov).

Figure 10: outfield players born in 2003 or after with the most experience capital (from 01/01 to 01/12/2021)

1	Jude Bellingham / Borussia Dortmund (GER)	64.5	■
2	Fabricio Díaz / Liverpool FC (URU)	48.5	■
3	Florian Wirtz / Bayer Leverkusen (GER)	48.1	■
4	Loizos Loizou / AC Omonia (CYP)	41.0	■
5	Arsen Zakharyan / Dinamo Moskva (RUS)	39.3	■
6	Yerson Chacón / Deportivo Táchira (VEN)	38.6	■
7	Devyne Rensch / AFC Ajax (NED)	36.7	■
8	Kaiky Fernandes / Santos FC (BRA)	35.3	■
9	Julio Enciso / Club Libertad (PAR)	33.6	■
10	Ísak Jóhannesson / FC København (DEN)	33.2	■
11	Benjamin Šeško / RB Salzburg (AUT)	32.5	■
12	Jamal Musiala / Bayern München (GER)	32.3	■
13	Telasco Segovia / CD Lara (VEN)	30.4	■
14	Adam Karabec / Sparta Praha (CZE)	29.4	■
15	Sebastián Kóša / Spartak Trnava (SVK)	28.2	■
16	Arnau Martínez / Girona FC (ESP/2)	28.1	■
17	Ricardo Pepi / FC Dallas (MLS)	28.0	■
18	Lazar Mijovic / FK Budućnost (MNE)	27.7	■
19	Pablo Gavi / FC Barcelona (ESP)	27.1	■
20	Marcelo Morales / Universidad de Chile (CHI)	24.3	■

Figure 11: goalkeepers born in 2003 or after with the most experience capital (from 01/01 to 01/12/2021)

1	Xavier Dziekoński / Jagiellonia Bialystok (POL)	20.2	■
2	Andrey Kudravets / BATE Borisov (BLR)	19.9	■
3	Ognjen Lukić / Radnički Kragujevac (SRB)	16.1	■
4	Jakub Ojrzynski / Caernarfon Town (WAL)	13.0	■
5	Daniil Khudyakov / Lokomotiv Moskva (RUS)	9.8	■
6	Zsombor Senkó / Juventus U23 (ITA/3)	9.7	■
7	Kacper Trelowski / Raków Częstochowa (POL)	9.5	■
8	Gabriel Slonina / Chicago Fire (MLS)	8.2	■
.	Krzysztof Bąkowski / Stomil Olsztyn (POL/2)	8.2	■
10	Robert Popa / FC U Craiova (ROM)	7.1	■
11	Hemmo Riihimäki / KPV (FIN/2)	5.4	■
12	Matyáš Vágner / FC Vlašim (CZE)	5.3	■
.	Hristiyan Slavkov / Botev Plovdiv II (BUL/2)	5.3	■
14	Eetu Huuhtanen / FC Ilves (FIN)	4.7	■
15	Mikolaj Reclaf / GKS Jastrzebie (POL/2)	4.5	■
16	Marko Čopić / FK Grafičar (SRB/2)	4.0	■
17	Nikodem Sujecki / KS Częstochowa (POL/2)	3.4	■
18	Davyd Alekseev / FK Ural II (RUS/3)	3.3	■
19	Ivan Cardoso / FC Porto B (POR/2)	3.0	■
20	Josh Keeley / St Patrick's Athletic (IRL)	2.0	■

4. Conclusion

Based principally on a coefficient of sporting force applicable to all clubs worldwide, the experience capital method allows us to combine within a single metric the quantity and quality of the matches played by footballers over the period of time desired (the past six months, last year, the last two years, etc.).

Exclusively developed by the CIES Football Observatory research team, this method constitutes a formidable means to objectively compare the level of experience of players from all over the world. Insofar as players regularly fielded from an early age are best equipped to fully develop their potential, the method is particularly useful when it comes to scouting talent.

By considering the first eleven months of 2021, the highest values for experience capital were recorded for Thibaut Courtois (Real Madrid and Belgium) among goalkeepers and David Alaba (Real Madrid, Bayern Munich and Austria) for outfield players. Among the footballers born in 2001 or after, the Turk Ersin Destanoğlu (Beşiktaş JK) tops the rankings for goalkeepers, while the Ukrainian Ilya Zabarnyi (Dinamo Kyiv) heads the table for outfield players.