

Is there an optimum squad age to win in football?

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1. Introduction

The demographic analysis of squads is a key research area of the CIES Football Observatory. The 32nd edition of the Monthly Report analyses the age structure of teams in 31 top division European leagues. This allows us to show discrepancies on an international level, while also investigating the links between the age structure of teams and success.

Leagues and clubs greatly differentiate themselves with regard to the age of their squad members. While the most competitive teams and championships are not the youngest ones, they are also generally not those with the most seasoned players. The gaps observed also reflect the existence of distinct cultures and strategies.

The study stretches over a period of nine years between 2009 and 2017. In order to be included in the analysis, a footballer had to be present on the 1st of October in the first team squad of the clubs surveyed. Moreover, he should have already played in domestic league games during the season of reference, or, if this was not the case, to have taken part in adult championship matches during each of the two previous seasons. The second and third goalkeepers were considered in all cases.

Figure 1: leagues and players surveyed (2009-2017)

AUT	Bundesliga	848	
BEL	First Division A	1510	
BLR	Premier League	1025	
BUL	First League	1346	
CRO	1. HNL	1190	
CYP	1. Division	1541	
CZE	Czech Liga	1251	
DEN	Superliga	1005	
ENG	Premier League	1753	
ESP	Liga	1721	
FIN	Veikkausliiga	1080	
FRA	Ligue 1	1778	
GER	Bundesliga	1468	
GRE	Super League	1677	
HUN	NB I	1314	
ISR	Ligat ha'Al	1155	
ITA	Serie A	1742	
NED	Eredivisie	1550	
NOR	Eliteserien	1333	
POL	Ekstraklasa	1427	
POR	Primeira Liga	1771	
ROM	Liga I	1648	
RUS	Premier League	1429	
SCO	Premiership	1165	
SRB	Super Liga	1576	
SUI	Super League	909	
SVK	Super Liga	1139	
SVN	1. SNL	1016	
SWE	Allsvenskan	1324	
TUR	Süper Lig	1636	
UKR	Premier League	1223	

2. Age gaps

The age of teams across Europe vary widely according to league. The Cypriot top division is the competition having regrouped the most seasoned players between 2009 and 2017: 27.5 years on average. Italian Serie A teams also have ageing squads (27.1 years). This is about three years more than in Croatia and Slovenia. The average age of players for all of the 31 top divisions and nine years analysed is 25.9 years.

Considerable differences in the average age of squad members also exist between teams. Figure 3 lists the clubs with the oldest squads since 2009 in the 31 top division leagues surveyed. The record high was measured for Chievo in 2015: 30.6 years. Two other teams had a squad of players on average over 30 years old: the Cypriot sides AEK Larnaca (2016) and APOEL FC (2012). Eight clubs out of the ten oldest teams are located in the Mediterranean area (Italy, Cyprus, Turkey and Greece). This is a first indication of regional peculiarities.

At the opposite end of the spectrum, no team since 2009 has had a squad as young as FK Rad Belgrade in 2013: 21.0 years on average. None of the ten youngest teams are located in the most competitive European leagues. Six of them are located in Serbia, Croatia and Finland. The very young squads of some of the clubs in the top ten rankings primarily reflect financial troubles. This was notably the case for Alki Larnaca and Heart of Midlothian in 2013.

Figure 2: average age of squad members, by league (2009-2017)

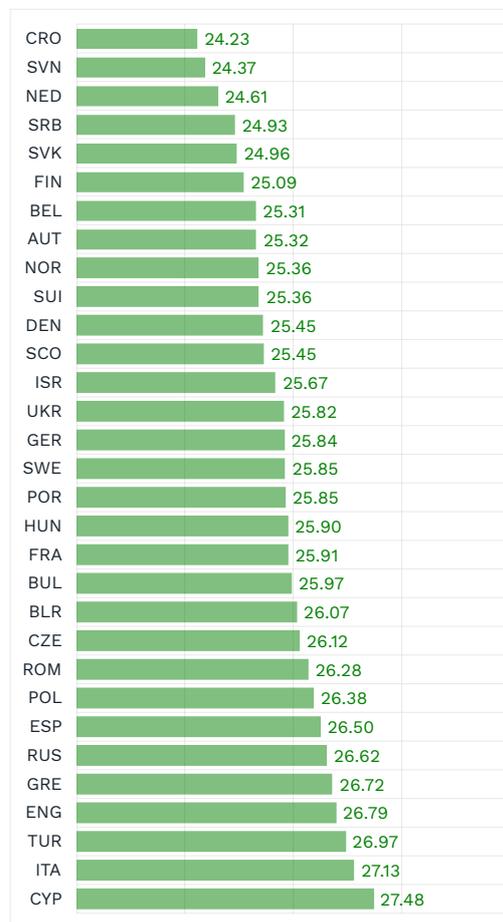


Figure 3: oldest squads, 31 top division European leagues (2009-2017)

Chievo Verona (ITA)	2015	30.58
AEK Larnaca (CYP)	2016	30.44
APOEL FC (CYP)	2012	30.38
Milan AC (ITA)	2011	29.98
Arsenal Tula (RUS)	2016	29.76
SS Lazio (ITA)	2011	29.70
İstanbul Başakşehir (TUR)	2017	29.68
Internazionale Milano (ITA)	2010	29.60
Szolnok MÁV (HUN)	2010	29.56
AOK Kerkyra (GRE)	2011	29.52

Figure 4: youngest squads, 31 top division European leagues (2009-2017)

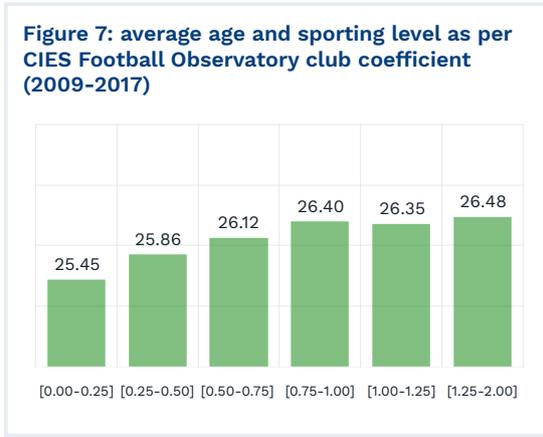
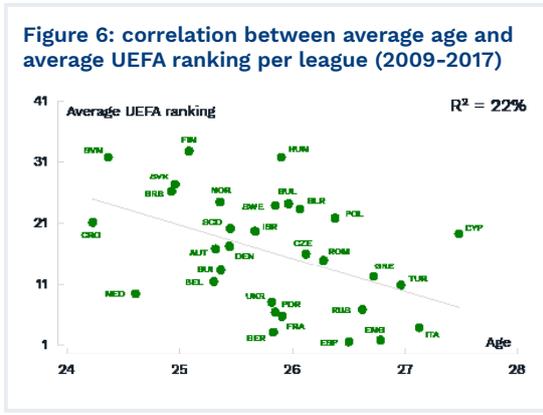
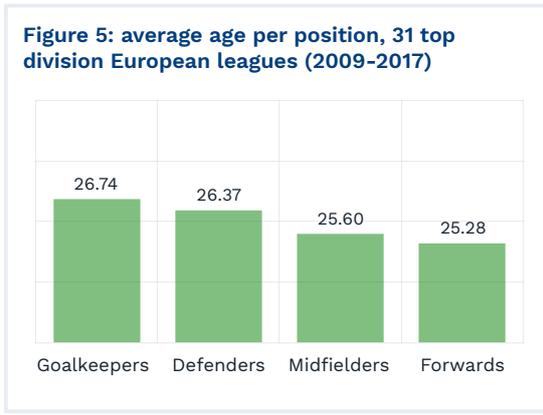
FK Rad (SRB)	2013	21.01
Alki Larnaca FC (CYP)	2013	21.18
Stal Kamianske (UKR)	2017	21.24
Heart of Midlothian (SCO)	2013	21.33
PK-35 Vantaa (FIN)	2016	21.62
Lokomotiva Zagreb (CRO)	2012	21.63
FC Honka (FIN)	2014	21.65
AS Trenčín (SVK)	2014	21.74
Hajduk Split (CRO)	2013	21.80
OFK Beograd (SRB)	2014	21.80

The average age of players also vary greatly according to position. The general rule is that goalkeepers are older than defenders, defenders are older than midfielders and midfielders are older than forwards. In the 31 leagues surveyed, goalkeepers were almost 1.5 years older than forwards. This is mainly due to the different physical attributes required by this position, as well as the greater importance of experience for goalkeepers. This is also true for defenders with respect to midfielders and forwards.

Another general rule is that the most competitive leagues generally bring together more seasoned players than the least competitive championships. The statistically significant negative correlation between age and UEFA ranking confirms this observation. However, there are many residuals. Dutch and Croatian clubs, for example, clearly over-perform in European Cups with respect to the average age of their squad members. Conversely, Cypriot teams do not achieve the results that one would expect with regard to the experience level of their players.

A correlation also exists between the sporting level of clubs and the average age of their squads. The sporting level is calculated using the CIES Football Observatory club coefficient. This exclusive classification method takes into account the performance of national association representatives in European club competitions, the division of the employer club in the domestic league and results achieved.

Generally, clubs that are more competitive have older squads. This rule applies perfectly to each of the four lowest club level categories presented in figure 7. However, no significant difference was observed for clubs in the three top categories. This finding reveals that after a certain threshold of sporting and economic power, the age structure of clubs tends to converge. Our analysis suggests that the optimal average age of squad members is between 26 and 27 years.



3. Age for champions

None of the ten youngest champions during the period analysed belong to the most competitive European leagues. The Slovakian side AS Trenčín tops the table ahead of two Dutch clubs: Ajax and PSV Eindhoven. The latter examples show that it is possible to win with very young squads even in countries ranked in the top ten of the UEFA table. However, this is generally not the case at the very top of the European football pyramid. The youngest big-5 league champion during the period surveyed was Borussia Dortmund in 2011/12 (24.7 years).

The top ten list of the oldest clubs crowned champions from 2009 to 2017 shows the specificity of the Italian case. Three Serie A teams are among the four champions with the most seasoned squads. Another team from a country with a favourable disposition towards experienced players tops the table: APOEL Nicosia from Cyprus. They are also the only champions whose squad members were on average over 30 years old on the 1st October of the season when they won the league.

The comparative analysis of the average age of champions between leagues also reveals cultural differences in the perception of the most favourable age structure for a squad. At one extreme, the youngest champions are to be found in the Netherlands (24.2 years), where teams pay great attention to the training and development of young talents. At the other extreme, Cypriot champion teams had the oldest squads over the period surveyed (28.8 years).

Figure 8: average age of champions, by league (2009-2017)

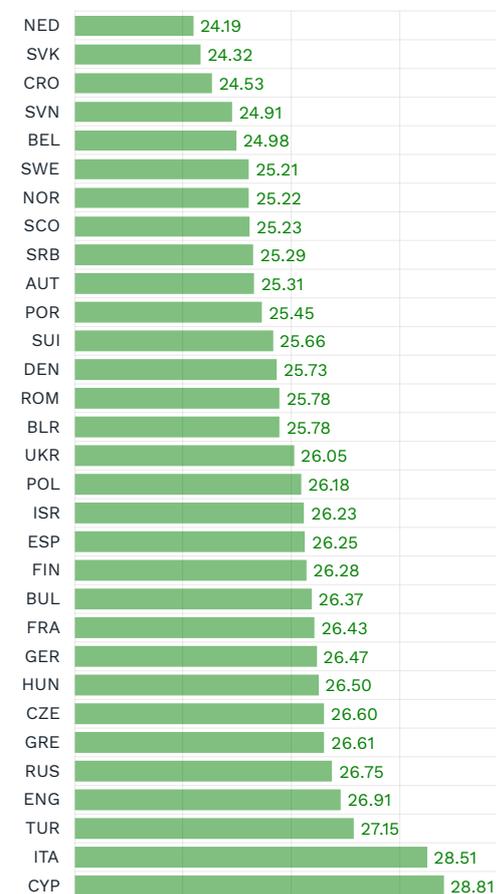


Figure 9: youngest champions, 31 top division European leagues (2009-2017)

AS Trenčín (SVK)	2014	21.74
AFC Ajax (NED)	2012	22.66
PSV Eindhoven (NED)	2014	22.84
Viitorul Constanța (ROM)	2016	23.01
NK Maribor (SVN)	2010	23.02
Malmö FF (SWE)	2013	23.20
RB Salzburg (AUT)	2015	23.23
FC Nordsjælland (DEN)	2011	23.56
BATE Borisov (BLR)	2009	23.68
Celtic FC (SCO)	2012	24.02

Figure 10: oldest champions, 31 top division European leagues (2009-2017)

APOEL FC (CYP)	2012	30.38
Milan AC (ITA)	2010	29.20
Internazionale Milano (ITA)	2009	28.92
Juventus FC (ITA)	2013	28.86
RB Salzburg (AUT)	2009	28.35
Viktoria Plzeň (CZE)	2014	28.30
Zenit St Petersburg (RUS)	2011	28.28
Fenerbahçe SK (TUR)	2013	28.28
Hapoel Be'er Sheva (ISR)	2016	28.17
Bayern München (GER)	2016	27.98

4. Conclusion

Squad assembly is an art that must be carefully mastered to be successful. Evidence shows that a good balance is necessary to perform durably at the highest level. A balanced age structure permits young footballers to develop alongside more experienced players and progressively replace them as pillars of the team. This is also a necessary prerequisite to maintain a satisfactory level of stability and performance over the long term.

While no single truth exists with regard to the relationship between age structure and success, the median age of champions in the five major European leagues between 2009 and 2017 is a good indicator of a possible benchmark. This figure is 26.5 years old. In accordance with previous findings, we can state that in order to achieve sustainable success, it is important for clubs to have as many players who did not celebrate their 27th birthday than footballers over this age threshold.