

## Performance and playing styles in 35 European football leagues

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### 1. Introduction

The analysis of pitch performances at both individual and collective level is one of the three principle fields of research of the CIES Football Observatory. The 28th edition of our Monthly Report compares 35 national competitions across Europe using the database made available by the **InStat** company. The sample comprises 19,544 matches played between the 1st September 2015 and the 31st August 2017.

The analysis focuses on three aspects: the teams' ball management, the degree of openness of games, as well as the level of power balance between opponents. For each of these domains, we present statistical indicators that permit the ranking of leagues on a pertinent and objective basis.

**Figure 1: sample of leagues and number of matches analysed**

Association	League	Name	Matches
Austria	AUT	Bundesliga	355
Belgium	BEL	First Division A	556
Belarus	BLR	Premier League	454
Bulgaria	BUL	First League	417
Croatia	CRO	1. HNL	354
Czech Rep.	CZE	Czech Liga	480
Denmark	DEN	Superliga	448
England	ENG	Premier League	750
	ENG/D2	Championship	1'115
Spain	ESP	Liga	760
	ESP/D2	Segunda División	935
Finland	FIN	Veikkausliiga	393
France	FRA	Ligue 1	758
	FRA/D2	Ligue 2	760
Germany	GER	Bundesliga	603
	GER/D2	2. Bundesliga	604
Greece	GRE	Super League	500
Hungary	HUN	NB I	395
Israel	ISR	Ligat ha'AL	424
Italy	ITA	Serie A	760
	ITA/D2	Serie B	964
Netherlands	NED	Eredivisie	615
Norway	NOR	Eliteserien	462
Poland	POL	Ekstraklasa	592
Portugal	POR	Primeira Liga	556
Romania	ROM	Liga I	529
Russia	RUS	Premier League	488
Scotland	SCO	Premiership	421
Serbia	SRB	Super Liga	571
Switzerland	SUI	Super League	354
Slovakia	SVK	Super Liga	377
Slovenia	SVN	1. SNL	350
Sweden	SWE	Allsvenskan	470
Turkey	TUR	Süper Lig	612
Ukraine	UKR	Premier League	362

## 2. Ball management

The first indicator used when comparing leagues from the point of view of ball management is that of the percentage of successful passes. A high value indicates the ability of a team to retain possession of the ball. This indicator notably refers to the technical prowess of players, the pass distance, the playing style, as well as the pressure on the footballers who have possession.

The five major European leagues ranks among the first seven places. The ranking of the Swedish (3rd) and the Israeli (4th) top divisions is surprising, given the relatively modest results obtained by their representatives in European competitions. As illustrated in figure 3, the level of pressure on the player with possession partially explains this result. As for Israel, the lack of verticality is also to be considered (figures 4 and 5).

Generally speaking, the most competitive championships bring together players with superior technical skills and are made up of more clubs whose philosophy of the game is based on possession. Portugal and Ukraine are the only two countries in the top ten places of the UEFA rankings whose level of successful passes is below 80%. As shown in tables 6 and 7, this result must be considered in parallel with the low level of competitive balance in these championships.

**Figure 2: % of successful passes, by league**

1. ITA	82.4%	19. HUN	79.6%
2. FRA	82.2%	20. POL	79.3%
3. SWE	82.0%	21. FRA/D2	79.2%
4. ISR	81.8%	22. ITA/D2	79.2%
5. ENG	81.4%	23. POR	79.1%
6. ESP	81.2%	24. NOR	79.1%
7. GER	81.1%	25. SVN	78.9%
8. RUS	81.0%	26. SRB	78.6%
9. TUR	80.6%	27. BLR	78.4%
10. NED	80.5%	28. GER/D2	78.4%
11. DEN	80.5%	29. ENG/D2	78.4%
12. CRO	80.2%	30. GRE	78.3%
13. BEL	80.1%	31. SVK	77.7%
14. BUL	80.0%	32. ESP/D2	77.6%
15. FIN	80.0%	33. AUT	77.6%
16. SUI	79.9%	34. SCO	77.2%
17. ROM	79.7%	35. CZE	77.2%
18. UKR	79.6%	<b>Average</b>	<b>79.7%</b>

The level of successful passes is reflected, by and large, on the average length of a phase of possession. The values for this indicator vary between less than 12 seconds for the Czech 1. Liga and 15 seconds for the English Premier League. As a general rule, the phases of possession last longer in the best performing championships than in lesser competitive leagues.

The indicator of the number of successful passes per minute of possession is also interesting when it comes to understanding the rapidity of ball circulation. The five major European leagues are in this case in the top five positions. Big-5 league teams are not only able to achieve a greater proportion of passes than the average, but are also able to execute them in a speedier manner.

The relatively lower level of passes per minute measured for the Swedish and Israeli top divisions in comparison to the percentage of successful passes probably reflects a lesser need to quickly pass the ball around in order to undo the opponents' defensive game. The same conclusion is valid for the Dutch Eredivisie and the Belgian Pro League.

**Figure 3: number of passes per minute of possession, by league**

1. GER	18.21	19. CZE	17.56
2. FRA	18.17	. ROM	17.56
3. ITA	18.12	. ITA/D2	17.56
4. ESP	17.91	22. GRE	17.50
. ENG	17.91	. ENG/D2	17.50
6. POL	17.90	24. HUN	17.46
7. RUS	17.88	25. SVN	17.43
8. AUT	17.83	26. POR	17.38
9. GER/D2	17.76	27. ESP/D2	17.35
10. TUR	17.70	28. SCO	17.33
11. DEN	17.68	29. BEL	17.28
12. SUI	17.67	30. ISR	17.24
13. SVK	17.65	31. BUL	17.17
14. BLR	17.63	32. FIN	17.07
. CRO	17.63	33. NOR	17.04
16. UKR	17.58	34. NED	16.90
. FRA/D2	17.58	35. SRB	16.69
18. SWE	17.57	<b>Average</b>	<b>17.55</b>

### 3. Degree of openness

The second area analysed is the degree of openness of matches. The number of goals scored is a simple but useful indicator to measure the balance of power between attack and defence according to league. Here also, the gaps observed show up divergences both in the abilities of players and the playing philosophies of teams. The imbalance between clubs can also explain some differences (see next chapter).

The number of goals per match in the competitions studied varies between 2.24 for the Spanish Segunda División and 3.16 for the Swiss Super League. The most open championships locate in Western Europe. The Eastern European league whose teams score the most goals, the Slovakian top division, is only ranked twelfth. The five second division championships analysed are in the second half of the rankings. The big-5 leagues are, on the contrary, in the top half of the table.

**Figure 4: number of goals per match, by league**

1. SUI	3.16	19. GER/D2	2.56
2. NED	2.98	20. POR	2.53
3. SWE	2.94	21. SVN	2.52
4. BEL	2.86	22. ENG/D2	2.51
5. ESP	2.86	23. BUL	2.50
6. SCO	2.84	24. UKR	2.48
7. GER	2.83	25. FIN	2.45
8. NOR	2.81	26. SRB	2.44
9. ITA	2.77	27. FRA/D2	2.42
10. ENG	2.75	28. ROM	2.37
11. DEN	2.71	29. BLR	2.35
12. TUR	2.71	30. CRO	2.34
13. SVK	2.68	31. ITA/D2	2.33
14. POL	2.66	32. ISR	2.30
15. AUT	2.65	33. RUS	2.28
16. FRA	2.61	34. GRE	2.25
17. HUN	2.58	35. ESP/D2	2.24
18. CZE	2.58	<b>Average</b>	<b>2.60</b>

The indicator for the actual playing time per goal also allows us to evaluate the degree of openness of matches. At one extreme, in the Swiss Super League, a goal is scored every 16'17" of effective play. At the other, one must wait 23'32" to see a goal in Israel. The average for the 35 competitions analysed is 20'32".

Generally, the duration of actual play is higher in the most competitive championships than in the lesser performing leagues. This result reflects a greater fluidity of the game. The average effective playing time for the competitions analysed is 55.6%, with a minimum of 51.5% in Portugal and a maximum of 59.6% in Sweden.

**Figure 5: effective playing time per goal, by league (minutes)**

1. SUI	16:17	19. HUN	20:18
2. SCO	18:14	20. BUL	20:32
3. BEL	18:47	21. FRA	20:46
4. NED	18:48	22. UKR	20:56
5. ESP	18:50	23. SVN	20:59
6. GER	18:52	24. ENG/D2	21:25
7. NOR	19:07	25. ROM	21:34
8. SVK	19:07	26. SRB	21:59
9. TUR	19:11	27. FRA/D2	22:02
10. CZE	19:19	28. FIN	22:15
11. POR	19:30	29. ITA/D2	22:22
12. POL	19:35	30. ESP/D2	22:48
13. SWE	19:35	31. GRE	22:48
14. AUT	19:40	32. CRO	22:54
15. GER/D2	19:47	33. BLR	23:18
16. ENG	19:51	34. RUS	23:29
17. ITA	20:05	35. ISR	23:32
18. DEN	20:14	<b>Average</b>	<b>20:32</b>

## 4. Balance of power

The championships also differentiate greatly in the power balance between adversaries. Beyond goals scored by each team, the gaps in the number of shots from within the opponents' box and in the number of passes achieved are two technical indicators allowing us to grasp the differences in the pitch production between adversaries.

The most competitive teams not only shoot more often than lesser performing teams, but also are capable of shooting from a closer range. The difference in the number of shots from within the opponents' box is thus a particularly relevant indicator when measuring the power balance between teams.

At the level of the 35 competitions analysed, the gaps per match vary between 3.5 shots in the German Zweite Bundesliga and 5.1 shots in the Croatian top division. More generally, the second divisions of the five major European championships emerge as particularly evenly matched competitions. The low level of openness measured above is in part linked to this observation.

With the exception of the French Ligue 1, the big-5 competitions are part of the most unbalanced championships. While the general level of players is very high, the great differences between the financial means at the disposal of teams reflects in the dominance of certain clubs. Croatia, Ukraine and the Netherlands are in a similar situation.

**Figure 6: average gap between shots from within the opponents' box, by league**

1. CRO	5.11	. FIN	4.21
2. UKR	4.96	20. BUL	4.14
3. NED	4.94	21. SVN	4.13
4. SWE	4.63	. NOR	4.13
5. ENG	4.56	23. HUN	4.12
6. SVK	4.55	24. ISR	4.08
7. SUI	4.54	25. TUR	4.05
8. POR	4.53	26. FRA	3.95
9. BLR	4.52	. AUT	3.95
. SCO	4.52	28. RUS	3.88
11. ITA	4.49	29. ROM	3.85
12. CZE	4.40	. ITA/D2	3.85
13. ESP	4.37	31. POL	3.83
14. SRB	4.35	32. ENG/D2	3.74
15. BEL	4.34	33. FRA/D2	3.71
16. GRE	4.32	34. ESP/D2	3.64
17. DEN	4.25	35. GER/D2	3.51
18. GER	4.21	Average	4.24

The average gap of passes carried out by teams confirms the great balance existing in the second divisions of big-5 league countries. At the other end of the scale, this indicator highlights even more the five major European championships as being among the most unbalanced competitions from the point of view of the teams' technical production.

While a significantly positive correlation exists at team level between passes and shots, the link is not always very strong. Thus, the gaps between passes measured in the German, French, Israeli or Russian top divisions only marginally explain the gaps between shots. In this case, while still important, possession is not a key success factor.

**Figure 7: average gap of passes between adversaries per match, by league**

1. GER	195	20. BEL	140
2. UKR	179	21. FIN	138
3. ENG	176	22. SWE	137
4. ISR	174	23. SRB	136
5. SVK	168	24. BLR	136
6. ITA	166	25. POL	135
7. FRA	165	26. TUR	129
8. RUS	164	27. NOR	128
9. CRO	163	28. SVN	127
10. POR	158	29. ENG/D2	126
11. ESP	158	30. GER/D2	124
12. AUT	157	31. CZE	121
13. GRE	156	32. SUI	119
14. SCO	151	33. FRA/D2	113
15. BUL	149	34. ITA/D2	113
16. NED	145	35. ESP/D2	103
17. DEN	144	<b>Average</b>	<b>145</b>
18. HUN	143		

## 5. Conclusion

This Monthly Report is but an initial foray in exploiting the numerous possibilities available thanks to the new collaboration between the CIES Football Observatory and InStat. The depth and breadth of data produced by this company constitutes a solid basis for many future research projects.

In terms of performance analysis, the greatest difficulty resides in the ability to interpret data taking into account the particularities of the context from which they arise. The principle conclusion that we can draw here is that the top leagues differentiate themselves above all by the fluidity of games, as illustrated by the highest level of successful passes and the quickest ball circulation.

However, a better overall capacity to master the ball does not necessarily lead to more goals. The power balance between opponents and the playing philosophy of teams have the most determining role in the number of goals scored. An unbalanced championship with an attacking mentality will lead to more goals than an evenly matched competition with a defensive approach. The gaps observed between the top and second divisions in the big-5 league countries largely underwrite this observation.