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## Analysis of the Polish Highest Football League Competition System

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### Analiza systemu rozgrywek w najwyższej polskiej lidze piłkarskiej

#### Streszczenie

Artykuł koncentruje się na analizie systemu rozgrywek w najwyższej polskiej lidze piłkarskiej, w szczególności części mistrzowskiej, wprowadzonej w sezonie 2013/2014 po głównej części rywalizacji i zmodyfikowanej w sezonie 2017/2018. Bada on zmiany w klasyfikacji po regularnej części sezonu, zarówno w grupie grającej o mistrzostwo, jak i w grupie spadkowej. Symuluje hipotetyczną sytuację braku zmiany systemu rozgrywek w sezonach 2017/2018 i 2018/2019 oraz sytuację, w której obecny system byłby wykorzystany od sezonu 2013/2014. W obu przypadkach wyniki nie wykazują dużej zmienności, a co za tym idzie, podważają potrzebę modyfikacji z 2017 roku.

W dłuższej perspektywie można zaobserwować tendencję do większej zmienności wyników w części mistrzowskiej niż w grupie spadkowej. Nie ma jednak większych zmian w odniesieniu do

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dwóch ostatnich pozycji oznaczających spadek. W sześciu analizowanych sezonach wyniki różniły się jedynie w sezonach 2015/2016 i 2016/2017, kiedy w obu przypadkach tylko jedna drużyna zmieniła swoją pozycję spadkową. Pozycja zespołów grup mistrzowskich zmienia się w mniejszym stopniu, pomimo że tylko w dwóch z sześciu analizowanych sezonów zwycięzca sezonu regularnego zachował swoją pozycję i został końcowym mistrzem.

**Słowa kluczowe:** piłka nożna, format konkurencji, równowaga konkurencyjna, play-off, symulacja.

## Abstract

The paper is focused on analysing the competition system of the highest Polish football league, in particular the championship part after the main competition, introduced in the season 2013/2014 and modified in the season 2017/2018. It is a study of the changes in the rankings after the regular part of the season, both in the group playing for the title and in the relegation group. It simulates a hypothetical situation as if the system had not been changed for the 2017/2018 and 2018/2019 seasons and the situation as if the current system had been played since the 2013/2014 season. In both cases, the results do not show huge variations, which so far challenges the needs for the 2017 modifications.

In the long term, we can see a trend of higher variation of standings in the championship part after the main competition rather than in the relegation group. However, there are no major variations regarding the last two positions meaning relegation. In the six analysed seasons, the standings varied only in the seasons 2015/2016 and 2016/2017 – when only one team moved regarding the relegation positions in both cases. The standing of the championship group teams varies much less; although only in two out of six analysed seasons, the regular season winning team have kept their positions and became the final champions.

**Keywords:** football, competition format, competitive balance, play-off, simulation.

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## Introduction

Collective sports make use of league competitions. For professional sports, these can be of two types – “closed leagues” and “open leagues” [7]. Closed leagues are typical for North American competitions and their main characteristics is that entering or leaving them for sport-related reasons is not possible. As a result, clubs have to cooperate closely. They make agreements about transfer politics, salary cap levels, revenue sharing methods and other means for preserving financial stability of the participating clubs and the resulting competition balance [13].

Open leagues are typical for Europe and their main characteristic is that it is possible to be relegated from or advanced to a higher league. This system is the main tool to maintain a competition balance of such system. The weakest clubs

are relegated and replaced by the best teams from lower-level leagues. There is no typical strategy of mutual support between teams [1].

In European football, the winner and the relegated teams of a league are decided during the season. The way of competing is called competition format and each country elects it by itself. The prevailing form of these competitions is the so-called double round-robin system, when each team plays each team twice – once at home and once as a visitor [9]. This includes the five most important European leagues – English Premier League, Spanish La Liga, German Bundesliga, Italian Serie A and French Ligue 1. After playing all matches, the league champion, the teams promoted to European cups and the relegated teams are decided. This competition system can be considered as fair, seen from the sports point of view.

Recently, we can see an increase of “play-offs”. After the main competition, usually played in the double round-robin system, the teams divide into several groups and continue in smaller competitions. The league organisers mainly expect higher attractiveness of the competition. The teams play more crucial matches, which increases their quality and competitive skills. The after-main competition phases have also an economic effect, generating higher incomes from media rights, tickets, food and merchandising [8].

As for the 2018/2019 season, six countries have made changes to the format of their domestic top-tier competition. The top divisions in Austria and the Czech Republic have changed from a traditional system to a season divided into two parts, with clubs being split into two groups after the main competition [10].

Polish Ekstraklasa league have used the after-main competition part since the 2013/2014 season. They inspired other countries to adopt a similar system. For instance, the Czech Republic, introduced such a system from the 2018/2019 season. Polish experiences can become very useful for the development and the prediction regarding the Czech highest league.

The goal of this research is to identify the influence of the after-main competition introduction on the final results of the Polish Ekstraklasa in 6 seasons (from 2013/2014 till 2018/2019).

## **Material and Methods of Research**

The used data contain the results of the competition after the main competition and the final results, all taken from the website [ekstraklasa.org](http://ekstraklasa.org). Comparative analysis has been used, in particular concerning the comparison of the results after the main competition and the final results. Also two model situations have been compared mutually. The first one assumes further existence of the first phase model in the seasons 2017/2018 and 2018/2019. The second one models the situation that there was only the second model (after 2017) system from the begin-

ning (season 2013/2014). The results are compared. Mainly the modifications of the positions have been followed and analysed. As crucial modifications, shifts of positions of different teams at the highest positions were concerned, because these mean the acquisition of the championship and the participation at the European competitions; also the positions at the bottom of the table, meaning relegation, have been considered of highest interest for this study.

## **Ekstraklasa**

Polish highest league has been played since 1927 [3]. Excluding the 1946/1947 season, the double round-robin home-away system was used until 2013. The team that reached the highest number of points became the league champion.

Since the 2013/14 season, Ekstraklasa has used a modified system: After the main competition, based on the double round-robin system with 30 matches played by each team, teams are divided into two groups of eight. The first (championship) group plays for the places in the UEFA Champions League and UEFA Europa League. The second (relegation) group plays for remaining and relegation.

Both groups use the round-robin system, each team playing each opponent only once. The four best teams of the group get the advantage of playing four matches at home and three matches away. Altogether, each team will have played 37 matches. The team with the highest final number of points becomes the league champion. The two teams with the lowest number of points are relegated.

Points were an important part of the after-main competition. It began with the points from the main competition, were halved and, if necessary, rounded upwards. Up to Kaliszuk, it was done to increase the attractiveness of the after-main competition and its importance [5].

This system gave advantage to the teams that were successful at the end of the season. Soon both teams and the Polish Football Association (PZPN) began to criticise it. That brought a modification of the system. Since the 2017/2018 season, the division into two groups has remained, but the halving of points from the main competition disappeared. The teams keep the whole amount of points gained during the main competition [5].

## **Results**

The results are divided into two parts, first, the variation in the positions in the championship group, and then in the relegation group. The tables below show both the positions after the main competition and after the after-main competition

have been finished. Table 1 shows the official standings at the end of each part of each season.

Table 2 shows a model situation as if there was no modification in the system in 2017 and the points were kept divided by two. Table 3 shows the situation as if there has been only the system not transferring all points since 2013. Model situations, thus not following the reality, are in grey.

**Table 1.** Championship group – Positioning of the teams after the main competition and the final one

Order of the teams after the main competition						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
1.	Legia	Legia	Legia	Jagiellonia	Lech	Lechia
2.	Lech	Lech	Piast	Legia	Jagiellonia	Legia
3.	Ruch	Jagiellonia	Pogoń	Lech	Legia	Piast
4.	Pogoń	Śląsk	Zagłębie	Lechia	Płock	Cracovia
5.	Wisła	Wisła	Cracovia	Wisła	Górnik Z.	Zagłębie
6.	Zawisza	Górnik Z.	Lech	Pogoń	Korona	Jagiellonia
7.	Górnik Z.	Pogoń	Lechia	Termalica	Wisła	Pogoń
8.	Lechia	Lechia	Ruch	Korona	Zagłębie	Lech
Final standings after the whole season						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
1.	Legia	Lech	Legia	Legia	Legia	Piast
2.	Lech	Legia	Piast	Jagiellonia	Jagiellonia	Legia
3.	Ruch	Jagiellonia	Zagłębie	Lech	Lech	Lechia
4.	Lechia	Śląsk	Cracovia	Lechia	Górnik Z.	Cracovia
5.	Wisła	Lechia	Lechia	Korona	Płock	Jagiellonia
6.	Górnik Z.	Wisła	Pogoń	Wisła	Wisła	Zagłębie
7.	Pogoń	Górnik Z.	Lech	Pogoń	Zagłębie	Pogoń
8.	Zawisza	Pogoń	Ruch	Termalica	Korona	Lech

**Table 2.** Championship group – Final standings in the case of dividing the main competition points by two (model 1)

Final standings						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
1.	Legia	Lech	Legia	Legia	Legia	Piast
2.	Lech	Legia	Piast	Jagiellonia	Jagiellonia	Legia
3.	Ruch	Jagiellonia	Zagłębie	Lech	Górnik Z.	Lechia
4.	Lechia	Śląsk	Cracovia	Lechia	Płock	Jagiellonia
5.	Wisła	Lechia	Lechia	Korona	Wisła	Cracovia
6.	Górnik Z.	Wisła	Pogoń	Wisła	Lech	Pogoń

7.	Pogoń	Górník Z.	Lech	Pogoń	Zagłębie	Lech
8.	Zawisza	Pogoń	Ruch	Termalica	Korona	Zagłębie

**Table 3.** Championship group – Final standings without dividing the main competition points (model 2)

Final standings						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
1.	Legia	Lech	Legia	Legia	Legia	Piast
2.	Lech	Legia	Piast	Jagiellonia	Jagiellonia	Legia
3.	Ruch	Jagiellonia	Zagłębie	Lech	Lech	Lechia
4.	Wisła	Śląsk	Cracovia	Lechia	Górník Z.	Cracovia
5.	Lechia	Lechia	Pogoń	Korona	Płock	Jagiellonia
6.	Górník Z.	Wisła	Lechia	Wisła	Wisła	Zagłębie
7.	Pogoń	Górník Z.	Lech	Pogoń	Zagłębie	Pogoń
8.	Zawisza	Pogoń	Ruch	Termalica	Korona	Lech

Table 1 makes it clear that in two of the six seasons, the main competition winner has kept the position and won the title. This took place in the seasons 2013/2014 and 2015/2016, in both cases for Legia Warszawa. In the 2014/2015 and 2016/2017 seasons, the title was won by the team that finished on the second place after the main competition (Lech Poznan and Jagiellonia Białystok). The last two seasons (2017/2018 and 2018/2019) saw the title won by the teams that finished third after the main competition (Legia Warszawa and Piast Gliwice).

These variations are important, as the after-main competition decided about the champion in four out of six cases. There were no other important changes in the championship group standings. The first three teams can play in the UEFA competitions. Only once in the six seasons, one team got to such a position from a worse than third place after the main competition. This happened in the 2015/2016 season, when Zagłębie Lubin took profit of this competition part to move from the fourth position to the third one. At all other occasions, the first three teams after the main competition could successfully keep these UEFA places.

Table 2 models the results as if the model 1 (halving main competition points) was kept, in theory also for the 2017/2018 and 2018/2019 seasons (which did not happen, due to the pressure of the league teams).

Only one team profited from the 2017 changes: Lech Poznan, who completely failed in the championship group of the 2017/2018 season, earning only 5 points out of seven matches. In the case of model 1 (halving), the Poznan team would have fallen to the sixth position, losing the UEFA Europa League position. No other variations would take place.

Table 3 presents the standings in the case of having the model 2 (full transfer of the points from the main competition) from 2013, and not only from 2017, as

pushed by the teams. We can see that no major variations in the standings would take place. This is definitely true for the three top positions: The champion would remain champion, the runner-up would stay second and the bronze team would keep the third place. Only two slight variations would take place in the four re-calculated seasons. In the 2013/2014 season, Wisła Krakow and Lechia Gdansk would switch positions, and Pogon Szczecin and Lechia Gdansk would do the same in the 2015/2016 season.

**Table 4.** Relegation group – Positioning of the teams after the main competition and the final one

Standings after the main competition						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
9.	Cracovia	Korona	Podbeskidzie	Płock	Arka	Wisła
10.	Jagiellonia	Piast	Korona	Zagłębie	Cracovia	Korona
11.	Korona	Podbeskidzie	Wisła	Śląsk	Śląsk	Legnica
12.	Śląsk	Cracovia	Jagiellonia	Arka	Pogoń	Górnik Z.
13.	Piast	Łęczna	Śląsk	Cracovia	Piast	Śląsk
14.	Podbeskidzie	Ruch	Termalica	Ruch	Lechia	Płock
15.	Zagłębie	Bełchatów	Łęczna	Piast	Termalica	Arka
16.	Widzew Łódź	Zawisza	Górnik Z.	Łęczna	Sandecja	Sosnowiec
Final standings after the whole season						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
9.	Śląsk	Cracovia	Wisła	Zagłębie	Cracovia	Wisła
10.	Podbeskidzie	Ruch	Śląsk	Piast	Śląsk	Korona
11.	Jagiellonia	Korona	Jagiellonia	Śląsk	Pogoń	Górnik Z.
12.	Piast	Piast	Korona	Płock	Arka	Śląsk
13.	Korona	Podbeskidzie	Termalica	Arka	Lechia	Arka
14.	Cracovia	Łęczna	Łęczna	Cracovia	Piast	Płock
15.	Widzew Łódź	Zawisza	Górnik Z.	Łęczna	Termalica	Legnica
16.	Zagłębie	Bełchatów	Podbeskidzie	Ruch	Sandecja	Sosnowiec

**Table 5.** Relegation group – Final standings in the case of dividing the main competition points by two (model 1)

Final standings						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
9.	Śląsk	Cracovia	Wisła	Zagłębie	Śląsk	Górnik
10.	Podbeskidzie	Ruch	Śląsk	Piast	Cracovia	Śląsk
11.	Jagiellonia	Korona	Jagiellonia	Śląsk	Pogoń	Wisła
12.	Piast	Piast	Korona	Płock	Lechia	Arka
13.	Korona	Podbeskidzie	Termalica	Arka	Arka	Korona

14.	Cracovia	Łęczna	Łęczna	Cracovia	Piast	Płock
15.	Widzew Łódź	Zawisza	Górnik Z.	Łęczna	Termalica	Legnica
16.	Zagłębie	Belchatów	Podbeskidzie	Ruch	Sandecja	Sosnowiec

**Table 6.** Relegation group – Final standings without dividing the main competition points (model 2)

Final standings						
Position	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
9.	Śląsk	Cracovia	Wisła	Zagłębie	Cracovia	Wisła
10.	Jagiellonia	Korona	Śląsk	Płock	Śląsk	Korona
11.	Piast	Piast	Jagiellonia	Piast	Pogoń	Górnik Z.
12.	Podbeskidzie	Ruch	Korona	Śląsk	Arka	Śląsk
13.	Korona	Podbeskidzie	Termalica	Cracovia	Lechia	Arka
14.	Cracovia	Łęczna	Podbeskidzie	Arka	Piast	Płock
15.	Widzew Łódź	Zawisza	Łęczna	Ruch	Termalica	Legnica
16.	Zagłębie	Belchatów	Górnik Z.	Łęczna	Sandecja	Sosnowiec

Table 4 shows the standings after the main competition and the relegation group. In this group, the number of points is lower and the post-main competition part has more influence. Therefore, it is not surprising that more variations in standings take place in this group than the championship one.

The largest improvement took place for Piast Gliwice, who jumped in the 2016/2017 season from the 15<sup>th</sup> place (relegation) to the 10<sup>th</sup> place and “saved” themselves. On the contrary, the largest position worsening was for Podbeskidzie Bielsko-Biała in the season of 2015/2016, as they fell from the 9<sup>th</sup> place to the last 16<sup>th</sup> position and were relegated. It is interesting that this team was not on the 8<sup>th</sup> place, guaranteeing the championship group, only because of a worse goal difference.

Table 5 models the results for the case, if the points acquired during the main competition were halved (divided by two) for the whole studied period. Table 6 presents the ranking of the teams for the situation, if the main competition points were not halved for any of the analysed seasons and all acquired points were completely transferred into the after-main competition part. From the presented tables, it is clear that only one team would have suffered from the system with halving the points.

## Discussion

The analysis shows interesting facts. The 2013–17 model saw the main competition points divided by two. This was modified from the 2017/18 season by transferring all the main competition points. The main argument was that the



worse teams had received an unfair chance to catch up with the better teams in points [5]. The analysis has shown that if the points were not divided by two and the points were kept on the same level as after the main competition, no major variations in the final standings would have occurred. In all of the studied six seasons, the first three teams finished always at the same positions.

The tables 1–3 show an interesting paradox. In the period of „dividing points“ (seasons 2013/2014, 2014/2015, 2015/2016 and 2016/2017), the champion was always at the first or second place after the main competition. Only in the seasons 2017/2018 and 2018/2019, when all the main competition points were transferred into the after-main competition groups (and the main competition was supposed to have more influence on the final standings), the league was paradoxically won by teams who were third after the main competition. We can say that the motivation for stopping with the halving of the main competition points was de facto denied (at least in the championship group).

We cannot say the same about the relegation group. Although, even here, the halving of points impacted only on one team: Podbeskidzie Bielsko-Biała. In four studied seasons of halving main competition points, it is the only team that was relegated because of this rule. If the model 2 was used after 2013, they would not have been relegated (see table 6). In all other cases, the same teams finished being relegated.

Also Table 5 shows that keeping model 1 for all studied seasons would see the same teams being relegated – so it is true also for the 2017/2018 and 2018/2019 seasons (model 2 in reality). We can say that no major changes have been brought by the system modification.

The introduction of the after-main competition in 2013 did not bring any crucial modifications in the positions after the main competition. The results of this research correspond also to those of Pawlowski and Nalbantis [8], who analysed the Austrian and the Swiss leagues in a similar way, as both of these leagues use an after-competition system. Moreover, this research can identify with their conclusions that the more games are played, the less uncertain is the championship race. When the final positions of the Ekstraklasa after the main competition changed, usually, the winning team was the favourite one at the beginning of the season. Certainly, we can say this about Legia Warszawa. Up to Transfer Market [11], this team had through the analysed period 2013–2019 always the highest market value. Many authors [2], [4], [6], [12] consider the market value of a team as a correct expression of its quality and of its chances of success in a competition. Legia Warszawa was therefore, according to these authors, the main favourite to win the league, although only the after-main competition part of the 2016/2017 and 2017/2018 seasons helped this team to win the championship title.

## Conclusion

Introducing the after-main competition since the 2013/2014 season has brought seven more matches to the Polish Ekstraklasa. In some of the cases, these changed the final standings of the teams, as compared to the main competition results.

At first sight, major variations took place in the championship group, seeing four times out of six another team reaching the first place and the champions title. The only major modification was the move of Zagłębie Lubin from the fourth to the third position in the 2015/2016 season. No other remarkable modifications to the rankings occurred.

A higher number of variations in rankings took place in the relegation group. This can be explained by the fact that the total number of points earned by the participating teams during the main competition is lower. Moreover, these were halved in the seasons 2013/2014 till 2016/2017, increasing the odds for modifying the final rankings of the teams. This was the main reason for modifications that the teams and the Polish football association called for.

The competition system modifications did not bring major variations in the championship group, with or without its further adaptation since 2017. In this case, the arguments for modifying the system did not prove right.

The authors of this study propose a compromise solution, based on the analysis: halving the points earned during the main competition for the teams playing in the championship group and transferring all the main competition points earned by the teams playing in the relegation group.

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