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(Review article)

COMPARATIVE ANALYSIS OF COMPETITIVE BALANCE OF MLS, PREMIER LEAGUE AND JELEN SUPER LEAGUE IN FOOTBALL FROM 2001 TO 2013

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Abstract

The importance of competitive balance as a factor that contributes to the quality of one sports league is reflected in the uncertainty of the competition. Matches whose outcome is known in advance do not attract the attention of fans or media, making the event loses its fundamental meaning. In the USA and Europe, there are different approaches of competitive balance problem solving. The aim of this study was to compare the competitive balance of Jelen Super League of Serbia, England Premier League and the US MLS Football League. The research was conducted in a 12 seasons period. Competitive balance is calculated using the RSD and HHI index. RSD results showed that the most even is a MLS, then follows England Premier League, while the most uneven is Jelen Super League. By calculating the HHI are confirmed investigative RSD's findings. The minimum value of the HHI index was recorded in MLS and is 2.125. In England Premier League this index is 5.167, and in the Jelen Super League is 7.500. MLS is the most even thanks to mechanisms whose goal is to achieve and maintain competitive balance. Thanks to these mechanisms quality of MLS is growing from season to season. In England Premier League, there are small number of quality teams who are fighting for the championship title, while in Serbia that number is reduced to two clubs. Thus, Red Star and Partizan for years stand out quality compared to other clubs in Serbia. In Serbia, just like in the former Yugoslavia, all these segments that equalize the competitive balance, excluding competition system that

works on the principles of the highest quality league in Europe, are not sufficiently high standard to allow their impact establishing a system of rules and regulations that will improve the quality of the competition.

Key words: football (soccer), balance, competition

Introduction

It is difficult to imagine today's world without football (Naghshbandi, Bahram, Zeher, & Mehdi, 2011). Federation International Football Association [FIFA] now has more members (*n = 209*) than the United Nations (*n = 193*). Gerrard (2004) notes that football is undoubtedly the most popular team sport in the world and at the same time a successful business, as Fort and Quirk nicely said (1995) that professional sports leagues "are in the business of selling competition on the playing field" (p. 1265). There is no doubt that football has global popularity and that its best moments experiencing at the beginning of the 21st century (Dabson & Goddard, 2001). Szyimaski (2001) pointed out the fact that 3% of world trade is done on the football industry, and Halicioglu (2006) adds that the value of the football industry is estimated at billions of dollars.

But despite this growth and development of football, there are many questions that football leagues should resolve to ensure their long-term success (Manasis & Avgerinou, 2013). One of the key issues is a *competitive balance*, which is primarily reflected in the uncertainty of sporting events (Michie & Oughton, 2004). Hoye, Smith, Westerbeek, Stewart, and Nicholson (2006) classified the competitive balance among *the eight factors that influence the quality of sports leagues*. Owen, Ryan, and Weatherston (2007) state that *the competitive balance is a degree of equality playing teams strength* and it represents a central concept in economic analysis of professional sports leagues. The importance of competitive balance as a factor that contributes to the quality of one sports league is reflected in the uncertainty of the outcome of the competition. Matches whose outcome is known in advance do not attract the attention of fans and the media, making the event loses its fundamental meaning.

Many authors that have dealt with researches in the field of economics of team sports have realized the importance of competitive balance, but they use different names for it (Goossens, 2006). Tokis (1949) does not name the problem as a competitive balance, but he added: „Baseball magnates are not fools. If anyone got together a group of perfect players, who would pay to see them play the other teams in the league“ (p. 708). According to the founder of the sports economy „The nature of industry (baseball) is such that competitors must be of approximately equals 'size' if any are to be successful“ (Rottenberg, 1956, p. 242). Neale (1964) used to talk about "League Standing Effect" (p. 1) in order to highlight the importance of different teams placements through several seasons. Jones (1969) emphasizes the "importance of competitive equality" (p. 3), while El-Hodir and Quirk (1971) speak of "equalization of competitive playing strength" (p. 1303) which, according to them, is an important factor for each league. Janssens and Kesenne (1986) stressed the importance of "sporting equality" (p. 305). In their research Quirk and Fort (1997) used the term uncertainty of outcome that are used by some other authors (Baimbridge, Cameron, & Dawson, 1996; Kesenne, 2003; Knowles, Sherony, & Haupert, 1992.

As there are different names, when it comes to competitive balance, there are different ways of its measurement. Zimbalist (2002) points out, "there are almost as many ways to measure competitive balance as there to quantify money supply" (p. 112). However, none of them have so well designed that fully answers the differences that exist primarily in European football leagues (Kringstad & Gerrard, 2007). These differences are reflected primarily in the fact that the North American leagues are closed league while in Europe the best clubs at the same time fighting on multiple fronts (play in multiple leagues). The most commonly used Ratio of Standard Deviation Index [RSD] who conceived Noll (1988) and Scully (1989). There are different alternative to RSD index. These are National Measure of Seasonal Imbalance [NAMSI] (Goossens, 2006), Herfindahl-Hirschman Index [HHI] (Owen, Ryan, & Weatherston, 2007), Gini Coefficient [Gini] (Utt & Fort, 2002), Surprise Index [S] (Groot & Groot, 2003) and others.

Football Leagues are of particular interest for the research of competitive balance. Michie and Oughton (2004) studied the football leagues of England, Italy, Germany, France and Spain. They noticed clear decline of competitive balance in the Italian Serie A League of 1992 so that the league has its biggest imbalance of all observed leagues until 2004, by which time the observation was carried out. Germany has also shown an imbalance, but it is generally decreased competitive disbalance in the reporting period. France has shown an increase in competitive balance of 1992. In Spain, the competitive balance grew in the period from 1956 to 1976, and then fell. In England it was a steady for 40 years (1947-1987), but after that the sharp decline was taking place. Goossens (2006) conducted a study of European football leagues of Germany, France, Portugal, Belgium and England. The conclusion is that Germany and France did not adopt a clear approach to the competitive balance of their leagues. Belgium and England showed a relative linear increase (i.e. a reduction in the competitive equilibrium), while Portugal was the only country that had expressed negative linear reduction (ie. Increase competitive balance). Haan, Koning and van Witteloostuijn (2007) have pointed out that the English football reduces the competitive balance. For such a reduction in Belgium and the Netherlands did not have the evidence, and did not notice nor clear approach competitive balance in Germany, France, Italy and Spain. Inan and Kaya (2011) compared the competitive balance in the first and second football division in Turkey. The C5 index and HHI indexes were used. It was found that there is a greater competitive balance in the second division of Turkey in football. Naghshbandi, Yousefi, Etemad, and Moradi (2011) were carried out a comparison of competitive balance in the best football league matches in Iran, England, Germany, France, Spain and Italy. There were used the following methods: S5 index and C5ICB index. C5 index indicates that the French League competition is most balanced, while in Spain and England are the least competitive balanced. According to C5ICB index the largest competitive balance was present in the Iranian league in December and the lowest in Spain and England. Bloching and Pawlowski (2013) measured the competitive balance in the five highest quality European football leagues. To measure the long-term equilibrium of competition they used CBR coefficient, HHI and C5 index. Mid-term

competitive balances were measured using UCS, UCL and UREL methods. Short-term competitive balance is calculated using the Theil index. They came to the conclusion that the most even competitive was French League while the English League competition was least balanced.

The aim of this study was to compare the competitive balance in the Serbian JSL, England Premier League, which is the highest quality in Europe and the MLS in the United States, which has the most developed mechanisms aimed at achieving and maintaining competitive balance.

Methods

Sample of entity

The sample of entity consists of three entities professional football league (Jelen Super League Serbia, the US MLS and English Premiership). The sample which is subjected to the study covers the period from the 2001/2002 season until the 2012/2013 season for all of these leagues. Number of clubs that competed in this period of 12 seasons varied in Jelen Super League and the MLS. In the JSL Serbia, the number of clubs has varied between 12 (the period between the seasons 2006/2007 and 2008/09) and 18 (2001/2002 and 2002/2003). As for MLS league in the 2001/2002 season were 10 clubs and the number increased to 19 in the 2012/13 season. In English Premiership, the number of clubs is not changed in a given period and the competition is constantly consisted of 20 teams.

Sample of variables

In this study we used the following variables:

- percentage of achieved victories for each team in the league (POB),
- the number of matches played by each team in the league (n),
- total of four first places at the end of the season of each team individually (x), and
- number of matches by season (s).

Methods of data procesing

The research was conducted by combining comparative method which was used to compare the competitive balance in professional football leagues, compilation method that is used for quoting various sources, statistical method which processed the collected data, method for calculation of RSD and the method for calculating of HHI index.

For mathematical and statistical calculations application computer programs were used: SPSS 20 and Microsoft Excel 2010. To create the chart is also used Microsoft Excel, 2010.

Results

Based on Table 1, we can conclude that the number of clubs, the participants in the Jelen Super League was variable. In the /2002 and 2002/2003 seasons it was attended by 18 clubs, while in the seasons 2006/2007, 2007/2008 and 2008/2009 it involved 12 teams. The average maximum impact of participating clubs is 86.1%, while the average value of minimum is 19.4%. As for the standard deviation, its average is 174. The value of ideal standard deviations is unchanged, depending on the change in the number of teams. The lowest recorded value is .086, while the highest is .091. The average value of the relative standard deviation is .918. The highest level of competitive balance was in the 2010/2011 season, while the lowest was in the 2007/2008 season.

Table 1 *Competitive balance in the Jelen Super League of Serbia*

S	*N*	*max (%)*	*min (%)*	*SD*	ISD	RSD
2012/13	16	.833	.200	.158	.091	1.736
2011/12	16	.900	.217	.184	.091	2.022
2010/11	16	.867	.083	.199	.091	2.187
2009/10	16	.900	.333	.157	.091	1.725
2008/09	12	.833	.364	.148	.087	1.701
2007/08	12	.848	.212	.188	.087	2.161
2006/07	12	.795	.068	.186	.107	1.738
2005/06	16	.883	.133	.191	.091	2.099
2004/05	16	.917	.167	.187	.091	2.055
2003/04	16	.850	.167	.170	.091	1.868
2002/03	18	.882	.132	.185	.086	2.151
2001/02	18	.823	.250	.135	.086	1.570
		.861	.194	.174		1.918

Legend: S- Season; *N*- Number of teams in the league; *max (%)* - Maximum realized wins of one participant team; *min (%)* - Minimum realized wins of one participant team; *SD* - Standard Deviation; *ISD* - Ideal Standard Deviation; *RSD* - Ratio of Standard Deviation indeks.

Table 2 shows the measures of competitive balance in English Premiership football. The measurement was performed for 12 seasons, beginning of the competition season 2001/2002 until the competition season 2012/2013. We can notice that the number of teams, participants in the league was constant and that the league consisted of 20 teams. The average winning percentage that is realized best placed team in the league is 80.3%. Similarly, the average winning percentage of lowest ranked teams is 27.1%. As we can see from the table, the average value of the standard deviation is .146. Given that the number of clubs, and therefore the number of matches, have not changed during the season, the ideal value of the standard deviation over all 12 seasons is .081. The average value of the relative standard deviation is 1.800. The League was the most even in the 2010/2011 season and the lowest competitive balance was recorded in 2007/2008.

Table 2 *Competitive balance in the English Premiership*

S	*N*	*max (%)*	*min (%)*	*SD*	ISD	RSD
2012/13	20	.803	.276	.152	.081	1.876
2011/12	20	.803	.263	.148	.081	1.827
2010/11	20	.750	.342	.111	.081	1.370
2009/10	20	.776	.276	.155	.081	1.913
2008/09	20	.816	.316	.159	.081	1.963
2007/08	20	.789	.132	.174	.081	2.148
2006/07	20	.803	.303	.137	.081	1.691
2005/06	20	.816	.158	.161	.081	1.988
2004/05	20	.868	.342	.144	.081	1.778
2003/04	20	.842	.342	.131	.081	1.617
2002/03	20	.763	.197	.135	.081	1.667
2001/02	20	.803	.303	.143	.081	1.765
		.803	.271	.146		1.800

Legend: S- Season; *N*- Number of teams in the league; *max (%)* - Maximum realized wins of one participant team; *min (%)* - Minimum realized wins of one participant team; *SD* - Standard Deviation; *ISD* - Ideal Standard Deviation; *RSD* - Ratio of Standard Deviation indeks.

In Table 3 we can see measures of competitive balance in the MLS league. It is noticeable that the number of clubs varied from 10 teams that played in the seasons 2002/2003 and 2003/2004 to the 19 teams that made up the league in the seasons 2001/2002, 2011/2012 and 2012/2013. Result-best teams during 12 seasons average realized 65.1% success and the worst recorded 31.7% success. The mean standard deviation for this period is .098. Number of participants in the league has constantly changed, therefore the number of matches played all the teams so we have a situation that the value of the ideal standard deviations vary between .086 and .094. The average value of the relative standard deviation is 1.099. League was the most even in 2001/2002 season, while the lowest competitive balance was recorded in the 2004/2005 season.

Table 3 *Competitive balance in the MLS lague*

S	*N*	*max (%)*	*min (%)*	*SD*	*ISD*	*RSD*
2012/13	19	.632	.191	.114	.086	1.325
2011/12	19	.691	.265	.121	.086	1.407
2010/11	18	.706	.323	.100	.086	1.163
2009/10	16	.683	.333	.127	.091	1.396
2008/09	15	.600	.267	.091	.091	1.000
2007/08	14	.667	.417	.076	.091	.835
2006/07	13	.650	.317	.105	.091	1.154
2005/06	12	.625	.391	.068	.088	.773
2004/05	12	.719	.219	.149	.088	1.693
2003/04	10	.617	.417	.067	.091	.736
2002/03	10	.633	.283	.097	.091	1.066
2001/02	19	.583	.383	.060	.094	.638
		.651	.317	.098		1.099

Legend: S- Season; *N*- Number of teams in the league; *max (%)* - Maximum realized wins of one participant team; *min (%)* - Minimum realized wins of one participant team; *SD* - Standard Deviation; *ISD* - Ideal Standard Deviation; *RSD* - Ratio of Standard Deviation indeks.

In Figure 1 we can see a graphical presentation of the comparative size of three leagues RSD index in the reporting period.

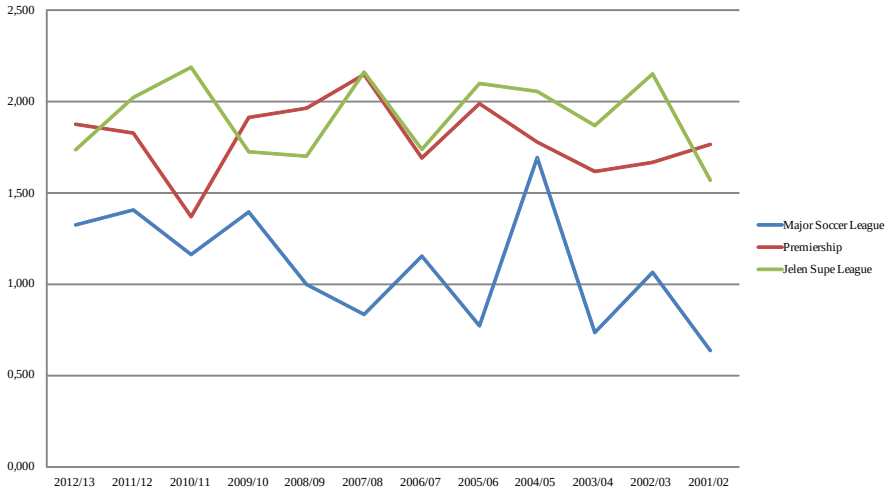

Figure 1 *Comparative overview of RSD index three leagues observed*

Table 4 shows the values of the HHI index in football leagues: England, USA and Serbia. The minimum value of the HHI index was recorded in MLS and is 2.125, and for England premier league and is 5.167.HHI index for the Jelen Super League is 7.,500.

Table 4 *Value of Hirfindahl-Hirschman index*

League	HHI
English Primership	5.167
MLS Lague	2.125
Jelen Super League of Srbia	7.500

Discussion

Tables 1-3 show measures of the most balanced football competitive leagues in Serbia, England and the United States. Showing applies for each season separately. Using RSD index we tried to get the answers to the question: how many teams per league are equable in quality? Results showed that the most even is MLS league, where the average value of the index is 1.099 RSD. English

Premier League is in second place with a value of 1.800. Jelen Super League of Serbia is in third place with 1.918 value. Jelen Super League of Serbia is, according to the results of this study, the most uneven by quality of clubs. It is certainly not surprising since it is known that the quality of clubs differentiated from the very beginning of league. Red Star and Partizan years stand out quality compared to other clubs and such situation in the past rarely changed. Football club Vojvodina Novi Sad certainly can follow these two clubs in the organizational sense, but in terms of results is not at their level. It is evident that already mentioned clubs have long not play a significant role in the European framework which makes the situation harder. By itself it raises the question: At what level are the rest of the participants of Jelen Super League of Serbia? Most of the other clubs in the organizational sense are at very low levels. The reasons for this are insufficient resources which these clubs have, as a direct consequence of the socio-economic situation in the country. Therefore, Jelen Super League of Serbia is 28th in the UEFA rankings (UEFA country coefficients, 2014). This is certainly disconcerting if we know that in this league participate former winner of the European Champions Cup (Football club Red Star) and former finalist of the same competition (FK Partizan).

The fact that the MLS League is in the first place by the uniformity certainly should not be surprising, given the rules: Draft, Salary Cap, Revenue Sharing, and Free Agency (Soebbing, 2008). It aimed make equal a quality of the teams.We should not ignore the fact that the quality of the competition year after year is constantly growing as the increasing influx of quality players from Europe and South America. Although the canvas limitation in the league is 3.1 million dollars, the league has found a way to attract those players who earn much more and whose presence will raise the overall quality of the competition. Adopted rule is that each club may designate three players who will not be subject to payment limits rule. The result is uniform competition that attracts more and more quality players. In the future we should expect an increase in the payment limit, and perhaps even his cancellation. In that way to MLS has become competitive with European, and South American leagues. The development of football in the United States is restricted by tradition. It is known that it does not belong to the national sports and

as such does not have the same treatment, nor popularity, to the extent that they have traditional American sports.

English Premiership certainly is one of the highest quality football competition professional association in the world. According to many indicators it represent the highest quality football league on the European continent. Modern football originated in England, and in 1888 was founded "The Football League" in England (Butler, 1998) only a few years after it was created the First Division in 1871 in the United States (Adelman, 1986). If we agree with the fact that English as a nation very much attention pay to nurturing tradition it is clear why the organization of the competition is at the highest possible level. However, there is no marked difference between the competitive balance in English Premiership and Jelen Super League of Serbia. The question is: What causes this situation? So be sure that the answer to that question was that some clubs sat aside by its quality to be competitive with the best European teams. So, some of the clubs have achieved excellence in the quality of which does not mean that they remained at above average levels. It can be said that they are clubs that are in English Premiership fight for survival in organizational and financial terms that they are in a much better position than clubs in other countries that are much better placed. However, competition is extremely high and these clubs cannot compete with those who every year break through the barriers in terms of investment in the playing squad.

We have already pointed out that the problem of imbalances in English football was pointed out by some other researchers. Naghshbandi et al. (2011) found that the English Premiership, with the Spanish Primera, is the most uneven by team quality. With a similar conclusion came Bloching and Pawlowski (2013). After them English Premiership competition is the most uneven of all the "Big 5 leagues."

Based on Table 4, we can see how much is actually missing the uncertainty in the Jelen Super League of Serbia. HHI is 7.500 which is a direct consequence of the dominance of Red Star and Partizan. In English Premiership HHI is slightly lower, with a value of 5.167 and based on that we can not say that there is a greater

uncertainty in terms of the candidates for the title. However, unlike Serbia, in England there are at least four clubs who are fighting for first place. As for the MLS, we can say that is a constant uncertainty when it comes to teams that compete for first place in the league season. This is demonstrated by HHI, which is 2.125.

Further research should be extended to some other leagues and use other methods to be able, with greater certainty, to determine the correlation between the uniformity and quality league.

Conclusion

The aim of this study was to compare the competitive balance between football leagues: Jelen Super League Serbia, English Premiership and MLS USA. The results clearly confirm the assumptions about non-uniformity of Jelen Super League compared to the elite ranks of the competition in England and the United States.

However, it should be noted that the disparity is not the biggest problem of club football in Serbia. On the basis of this work we can claim that neither England Premier League is a competition in which it was achieved a highest level of competitive balance. The main problem is organizational in nature. Clubs simply do not function as an organization with clearly defined strategies. Also, questions of ownership relations and financing of sports organizations are not resolved, which directly reflects on the football clubs. The talent of players is undeniable, many players from the Jelen Super League are upon departure made notable career in the finest European leagues. Therefore, it is necessary to translate a talent into quality through a quality competition, with stable clubs, participants.

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