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in German Amateur Football

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Abstract

Possible effects of the introduction of the three-point rule in 1995 are tested by using data from amateur football leagues in Germany, concretely in Westphalia. There are as expected significantly less draws and more goals since the rule change. For even amateurs follow incentives.

JEL-Codes: L83, Z20, Z28

Effekte der Drei-Punkte-Regel im deutschen Amateurfußball

Zusammenfassung

Mögliche Effekte der Einführung der Drei-Punkte-Regel im Jahr 1995 werden getestet mit Daten aus Amateurfußballligen in Deutschland, konkret in Westfalen. Es gibt erwartungsgemäß signifikant weniger Unentschieden und mehr Tore seit der Regeländerung. Denn auch Amateure folgen Anreizen.

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Effects of the Three-Point Rule in German Amateur Football*

1. Introduction

Since the season 1995/96 a win brings three instead of two points in German football (as well as in many other countries and in other team sports by now) while a draw brings unaltered one point and a loss none. The aim of this change of the scoring system were more offensive and interesting games. At least football is not a zero-sum game anymore and draws are less attractive. However, there could be unintended consequences and it is an empirical question whether the share of draws really declines. Results for the German premier league (1st *Bundesliga*) are limited but there are many more amateur leagues. Looking at them is also interesting in itself because amateurs could react differently from professionals to (changed) incentives.

2. Previous Studies

Klotz/Gerhard (2000) argue that the leading team should play more defensively under the three-point rule compared to the two-point rule. Empirically they find no difference five years before and after rule change in the German premier league. They think the behaviour of the teams is more emotional than rational.

Başlevent/Tunalı (2001) analyse the situation in Turkey where the rule was changed in 1987/88. In the Turkish premier league there is one more goal per game in 2000 compared to 1982. There are nearly 50 % less draws.

Guedes/Machado (2002) show that in Portugal's premier league there are insignificantly more wins and goals one year after the rule change compared to the previous year. However, the clearly weaker teams get more defensive.

Dewenter (2003) finds a decline in goals and of the home bias for the Portuguese premier league from 1934 to 2002.

Brocas/Carrillo (2004) show theoretically that the leading team should play more defensive and the trailing team more offensive under the three-point rule. At a draw both teams play more defensive in the beginning and later more offensive.

* This paper is based on the master thesis of Gerrit Froböse and a presentation by Alexander Dilger at the 3rd "Football & Finance" conference in Duisburg on March 28th, 2014. We thank the participants for valuable suggestions. Certainly, we alone are responsible for all statements here and any remaining errors.

Hundsdoerfer (2004) argues that the performance should always be maximal. Tactical changes are possible in every direction. Empirically he does not find any effects in the German premier league seven years before and after the rule change.

Shepotylo (2005) argues that collusion becomes attractive, especially for equally strong teams that are not at the top. In Ukraine there are more home wins from 1995 to 2003 (57 %) than in the USSR from 1980 to 1991 (54 %). There are more losses in the second half of the season after a home win in the first half. In Italy football is more competitive, aggressive and has more draws (32% vs. 22 %) in the period 1993 to 2003.

Garicano/Palacios-Huerta (2006) use data of the Spanish premier league (*La Liga*) and of the cup competition (*La Copa*) as controls from the seasons 1994/95 and 1998/99. In the latter period the teams play more offensive, at least as long as they are not leading. However, they also use more sabotage activities like fouls such that there are not more goals, not less draws and spectators are driven away.

Dilger/Geyer (2007) show that in the German premier league there are less draws and tighter wins in the ten years after the rule change versus ten years before. An anomaly are more draws in 1995/96, perhaps because the teams were still learning in the first season with the three-point rule what could explain the inconclusive results of other studies analysing fewer seasons. Dilger/Geyer (2009) confirm these results by a comparison with German cup games, in which the draws increased.

Aylott/Aylott (2007) compare seven countries and find that there are less draws and more goals (with the exception of Germany) with the three-point rule.

Haugen (2008) shows within a simple game theoretic model that teams play more offensive under the three-point rule and that thereby the competitive balance becomes lower. He presents some empirical evidence for this second effect from Norway, Romania and UK.

Moschini (2010) compares 35 countries over 30 years and finds that there are less draws and more goals after the introduction of the three-point rule. However, there are country-specific differences like less goals in Germany.

Shepotylo (2010) shows with data from eight European countries and from 1990 to 1997 that especially teams that had used tie-intensive tactics changed to more aggressive play in away games since the introduction of the three-point rule. The ratio of draws decreased accordingly but the number of goals did not increase because leading teams play more defensively.

Dewenter/Emami Namini (2013) show for the German premier league with data from 1982 to 2008 that the introduction of the three-point rule is linked to a reduction of the home bias as there are less goals and wins by the home team.

Mendoza/Rosas (2014) use the peculiarity of Argentine professional football that from 1995 to 1997 the three-point rule was only partially implemented because it was not used for relegation decisions. Using teams at the bottom of the league as control group they do find an increase in draws and a decrease in goals by the introduction of the three-point rule.

Riedl/Heuer/Strauss (2015) show with data from premier leagues of 24 countries over 20 years that there are less draws under the three-point rule compared to the two-point rule. However, the ratio of draws is in both cases higher than expected by a Poisson distribution. They explain this with the prospect theory that presumes a higher disutility of losses relative to the utility of wins.

Li/Parinduri (2016) find only a small reduction in draws and a small increase of goals by the three-point rule in the German premier league using a regression discontinuity design with data from 1980 to 2010. Both results are statistically insignificant such that they conclude that the aims of the rule change have not been met.

In sum, all previous studies are about professional football. The evidence is somewhat mixed but most studies show a reduction in draws. This is also the effect to be expected by giving draws relatively less points although some models make other predictions.

3. Data

In Germany there are several football leagues. The premier league (1st *Bundesliga*) has a second and (since 2008/09) a third division. These are followed by five (since 2012/13) *Regionalligen* that are also professional. Below them are *Oberligen* and *Verbandsligen* that are semi-professional. Finally, in Westphalia (like in most regions) there are amateur *Landesligen*, *Bezirksligen* and different *Kreisligen* from A to C and sometimes D. This hierarchy of leagues is shown in Figure 1.

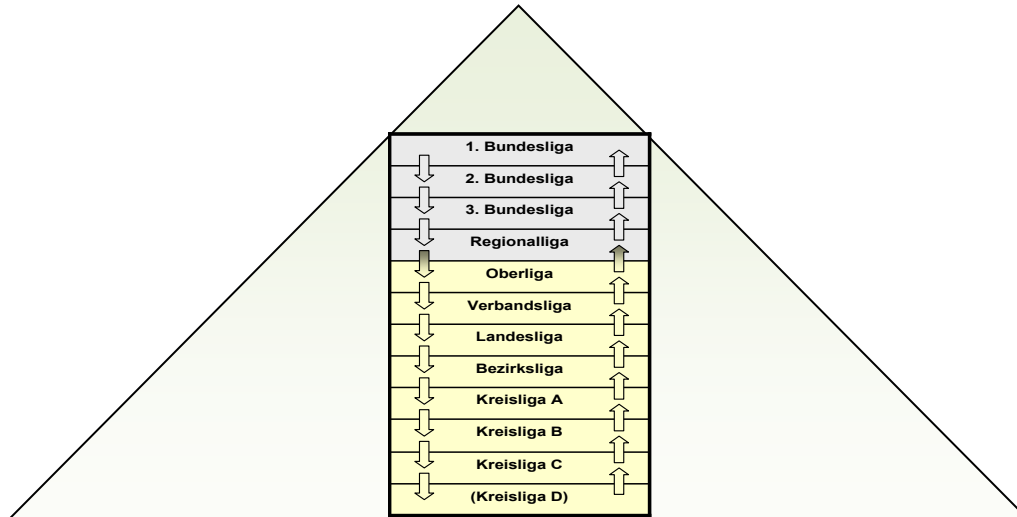


Figure 1: Football Leagues in Germany (Westphalia)

A first data set includes information for several leagues in Westphalia from 1992/93 to 1997/98, the last three years with the two-point rule and the first three years with the three-point rule. The numbers of included leagues is shown in Table 1.

Saison	Oberliga	Verbandsliga	Landesliga	Bezirksliga	Kreisliga A	Kreisliga B	Kreisliga C	Gesamt
1992/93	1	2	5	15	47	72	133	275
1993/94	1	2	5	15	47	72	133	275
1994/95	1	2	5	14	43	66	119	250
1995/96	1	2	5	15	43	70	125	261
1996/97	1	2	5	15	44	66	113	246
1997/98	1	2	5	15	47	68	112	250
Gesamt	6	12	30	89	271	414	735	1557

Table 1: Leagues Included in the First Data Set

A second data set includes 30 leagues (1 *Oberliga*, 2 *Verbands-*, 5 *Landes-*, 7 *Bezirks-* and *Kreisligen* A to C each with 5) for 30 years (1980/81 to 2009/10), 15 years before and after the rule change.

4. Hypotheses

Even if more complicated models can have other or more differentiated implications, the simplest expectation is that draws are less attractive since the introduction of the three-point rule (cf. Dilger/Geyer 2007 and 2009).

⇒ H₁: There are less draws since 1995/96.

The incentive to win and to score goals is higher under the three-point rule compared to the two-point rule.

⇒ H₂: There are more goals since 1995/96.

It is expected that not only professional football players and teams follow these incentives but also amateurs.

5. Empirical Results

In the first data set the proportion of draws falls from 19.73 % (in 1992/93 to 1994/95) to 17.84 % (in 1995/96 to 1997/98). This is highly significant because of 1,522 valid league tables with 21,930 team-years.

In the second data set the fall is steeper from 24.15 % (in 1980/81 to 1994/95) to 19.69 % (in 1995/96 to 2009/10). There are 887 valid league tables and 13,836 team-years. Proportion of draws in Westphalia is shown in Figure 2.

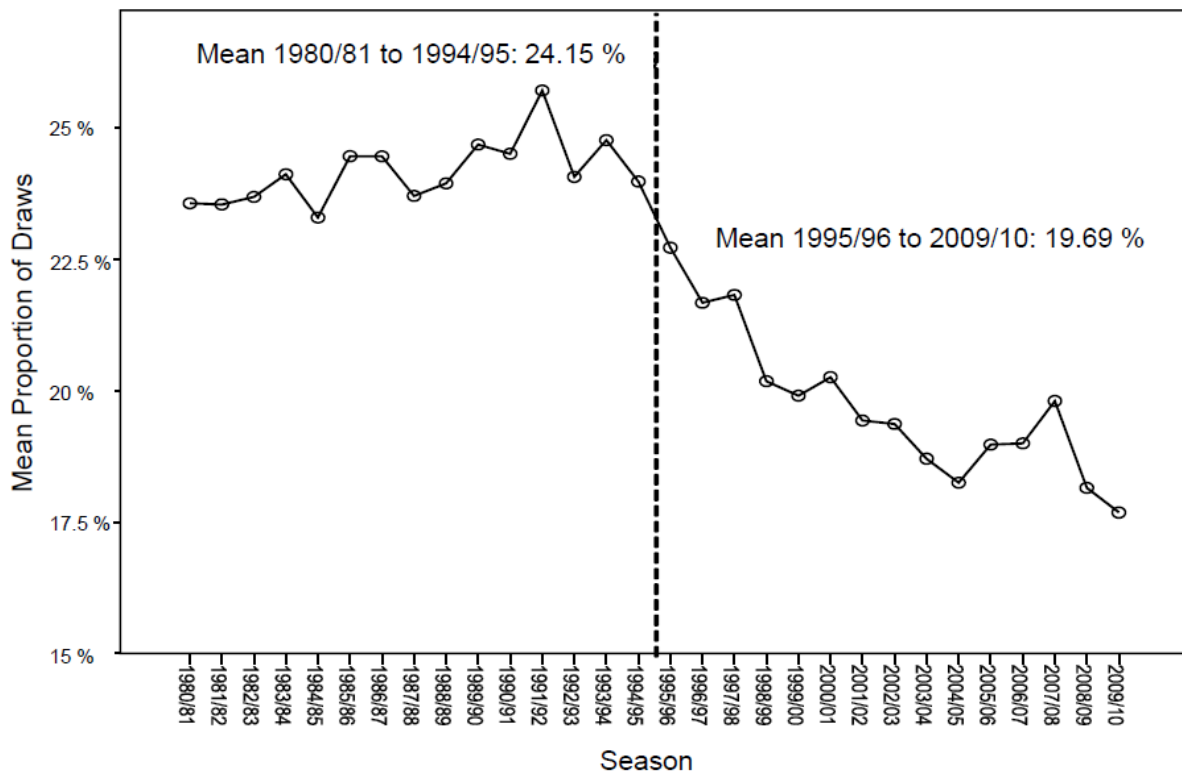


Figure 2: Proportion of Draws

In the second data set there are less draws in all 30 leagues since 1995/96, in 27 significantly so. That means H₁ can be accepted.

Another result is that the proportion of draws is lower in lower leagues: In the *Oberliga* it falls from 27.84 % (1992/93 to 1994/95) to 23.33 % (1995/96 to 1997/98) or 27.69 % (1980/81 to 1994/95) to 23.77 % (1995/96 to 2009/10), in *Kreisligen C* from 14.81 % to 13.48 % (for three years before and after the rule change) or 15.54 % to 13.19 % (for 15 years each).

In the first data set the average number of goals per game increases from 4.04 (1992/93 to 1994/95) to 4.17 (1995/96 to 1997/98). In the second data set the increase is higher from 3.52 (1980/81 to 1994/95) to 3.88 (1995/96 to 2009/10). Both results are highly significant.

The number of goals per game in Westphalia over time is shown in Figure 3.

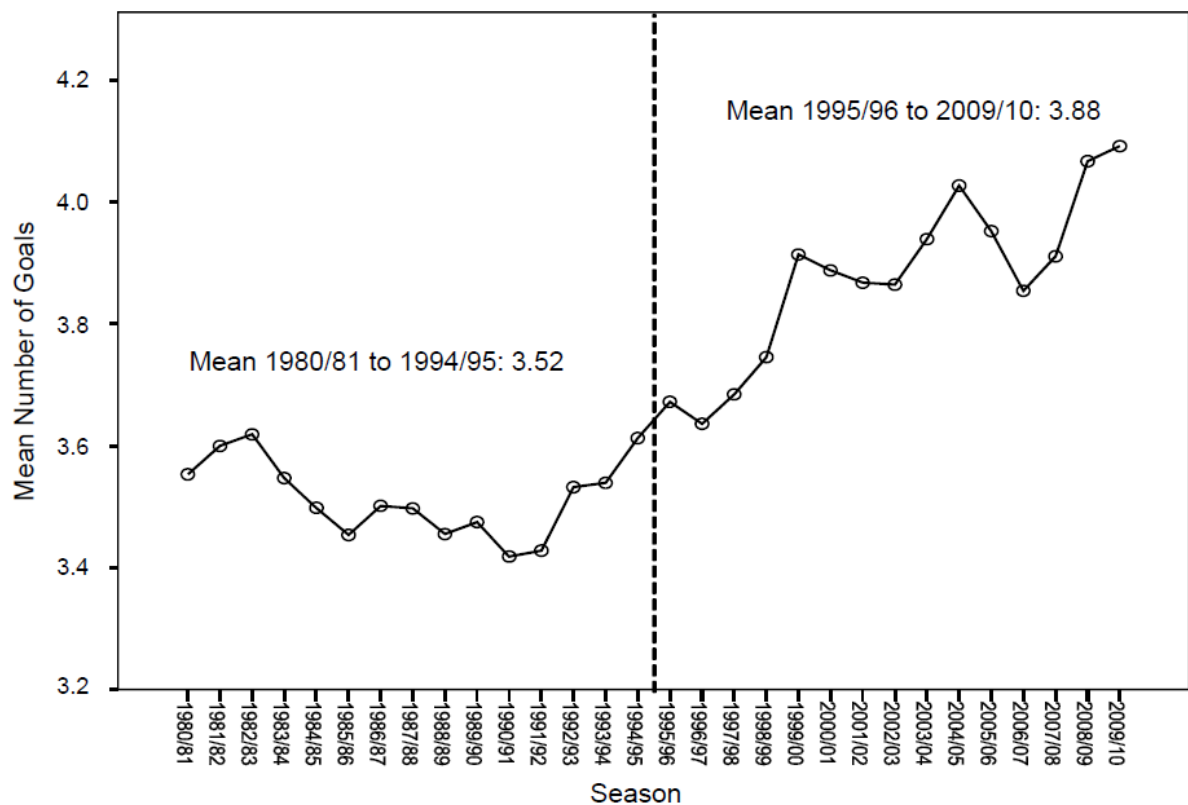


Figure 3: Number of Goals

In the second data set there are significantly more goals in 27 leagues since 1995/96, in the remaining 3 there are insignificantly less. That means H_2 can be accepted, too.

Another result is that the number of goals is higher in lower leagues: In the *Oberliga* it rises from 2.98 (1992/93 to 1994/95) to 3.40 (1995/96 to 1997/98) or 3.07 (1980/81 to 1994/95) to 3.16 (1995/96 to 2009/10), in *Kreisligen C* from 4.62 to 4.75 (for three years before and after the rule change) or 4.51 to 4.94 (for 15 years each).

6. Conclusion

There are clearly less draws and more goals in German (Westphalian) amateur football since the introduction of the three-point rule. There are many amateur leagues and thus data. The only limitation is that correlation is no proof of causation. However, the empirical results are as expected and there is no good alternative explanation.

There are systematic differences between higher and lower leagues like less draws and more goals in the lower ones. This is also true for amateur leagues in general compared to professional leagues. Therefore the three-point rule seems to offset some effects of higher professionalism.

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