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Attacking beautifully or defending efficiently? A historical and sociological analysis of the prevalence and effect of football strategies in Scandinavia

Introduction

To the extent the Norwegian male football team ever had some glory days, they are associated with two names: Egil "Drillo" Olsen and Nils Arne Eggen. Drillo succeeded with the national team in the nineties, and Eggen succeeded with Rosenborg in (more or less) the same period. In a recent book presented as a dialogue between the two, they appear, in many ways plausibly, as football ideological allies: attack before the opponents are ready to defend properly. At the same time, as the discussion between the two carries on, a familiar football ideological antagonism is nevertheless easily detected: “I have always been preoccupied with attacking play,” says Eggen, “I have become so,” counters Drillo. Where Eggen appears genuinely geared towards attacking, entertaining and producing a maximum number of goals, it seems that Drillo is more concerned with not conceding goals and winning, believing that the easiest and most efficient way towards success is to defend accurately. Portrayed like this, the two grand masters of Norwegian football fit neatly into a well-known narrative where: “The history of tactics, it seems, is the history of the
two interlinked tensions: aesthetics versus results on the one side and technique versus physique on the other ...”

More or less in line with these positions, we will find an almost endless list of partly overlapping topics and corollary binary controversies in modern football ideology: the offensive versus the defensive, attacking versus defending, the effective versus the aesthetic, results versus beauty, the evidence-based versus the experience or craft-based, the calculable against the unpredictable, the individual versus the collective, sideways versus forward, technique versus physique, purists versus pragmatists, poetry versus prose, possession versus (long) passing, ‘total football’ versus catenaccio, the systematic versus the innovative and creative, the structured versus the improvised, and on and on. This long list of hierarchically ordered football controversies easily contributes to confusion in the understanding of football.

On the one hand, we tend to simplify these debates because most positions are seen as coherent football ideological views: systematically designed, science-based, solid, boring, collective and well-structured defence is effective and gives results whereas (God) given individual creative brilliance and technique is beautiful, but seldom ends up a winner. Football is a simple game: attack beautifully and lose, or defend efficiently and win! On the other hand, we all know the picture is more complex. First and foremost, more than occasionally the most beautiful teams also win. Second, Anderson and Sally remind us of the fact that “The former is often associated with beauty and the latter with ruthlessness; but such terms are subjective judgments, distraction designed to make randomness easier to handle.” , and most writers on football ideology adhere to reminiscent views: “It is not even so simple, though, as to say that the ‘correct’ way of playing is the one that win most often”. Taken together, this lack of congruence – knowing things are complex, but opting for simple solutions - makes it clear that this – the topic of how teams actually play their football and the factual relation between how teams play and success – is a field too dominated by anecdotal evidence and a lack of systematic knowledge. This situation then makes it indeed timely to take a closer and more systematic look at the relations between the strategies
and tactics of attacking and defending, and what in the end really pays off. In this article, I will address these questions sociologically and historically in an attempt to sort out more systematically the extent to which (i) modern football actually practices one or the other - scoring goals or avoiding conceding, and (ii) how the two strategies actually pay off.

In the next section, I will outline some theoretical perspectives to generate a set of hypotheses guiding the empirical analyses. Thereafter, I will address four sides of the topic empirically. First, as background, I will simply look at the frequencies and variations in goal scoring: Is modern football, overall, becoming more offensive or defensive? Second, inspired by Moskowitz and Wertheim and Anderson and Sally, I will look into the question of who wins, those scoring the most goals or those conceding the least. Having answered this question, a third empirical section will open up for more complex analyses of this same question: How many goals are winning teams scoring and conceding as a proportion of the average teams’ scorings/concessions? This approach gives a better understanding of how success is related to football strategies over time. Finally, I will ask more directly how much scoring matters for position in the tables: How many positions are won by scoring/conceding a goal? The analyses are based on data from 65 years of Scandinavian male elite football. I wind up the article with a brief summary and a discussion of the general questions posed: the incidence and efficiency of offensive versus defensive football strategies.

Theories and hypotheses

The number of books on the football history of various nations is increasing and most of these books contain stories structured as some kind of wave-like or dialectical development. In most cases, either a kind of brutal football meets a more sophisticated type, causing frustration and resulting in the brutal coming up with some finesse, or elegant football meeting brute force, leading to a realization that stylish football is frail, teams coming back with more muscle, and so on. Two points alluded to in the introduction, nevertheless, emerge from these studies. First, there
exists a long list of ideological controversies played out through football history. Second, most of these conflicts have a more or less implicit link to ideas of strategy and efficiency in football. The prevalence of various strategies and the links between strategies and results are, however, seldom systematically discussed and hardly ever studied empirically. The first purpose of this article is to analyse the prevalence of the strategies inherent to the most enduring and consequential of these controversies: whether to emphasize offensive play or to defend. The next step is simply to look into the question of how this – scoring/conceding – matters for success (winning titles, position in leagues).

To extract a set of hypotheses to guide the empirical analyses, I will go through a selection of general sociological theoretical perspectives to see how they might indicate expectations with respect to the prevalence of offensive versus defensive strategies, how the balance between the two might develop and how choice of strategy eventually matter for success. For this purpose, a useful theoretical framework should address three levels: a micro level with more or less rational actors, a macro perspective addressing societal and cultural forces and a meso-perspective where micro and macro factors adjoin in organizational action.

**Micro:** To understand how football teams behave, a first and self-evident step is to assume that teams play to win and optimize their use of resources to achieve this rather obvious aim. The question then becomes, almost as a Hobbesian state-of-nature question: Did the first team attack or defend? Or more generally: Do most teams prioritize attack or defence? The answer is probably due to contingent historical factors and individual and organizational idiosyncrasies. A first hypothesis (H1) suggests as a start that there are few reasons to assume that specific strategies will dominate and football could be played any way until something – an opponent, cultural inspiration – motivates for more specific strategies.

Traditional ‘homo economicus’ perspectives have been criticized for ignoring some of the more obvious biases of human decision making, among them the tendency for most people
to be ‘loss averse’. Regarding decisions on football strategies, this could imply that teams are more worried about losing than keen on winning, which in turn could be taken to mean that (H2) teams focus more on defensive strategies than offensive strategies.

Moving from more individual actors to interaction, the most evident dynamic inherent to both choice of football strategies and their outcomes reflects the fact that football is a strategic game. One team employs a strategy (attack or defend), succeeds, further develops what brought success, and thereby strengthens their already well-proved competencies. The loser will somehow adjust to its failure by trying to emulate the winner, intensify their already established capabilities or go for something new. The next match will pose a new challenge, and by that time the loser will come out stronger – or at least wiser – and the winner from the first round will be forced to develop their old strategy beyond just strengthening it; they must take some inspiration from the opponent or innovate. This is one part of the basic dynamic inherent to games and also repeatedly found in the history of football and other societal fields, such as economics. That the advantages are shifting between various strategies is also realized by actors in the field, and Eggen suggests that

"... it moves in waves, and has done so as long I have been in the game. In some periods attacking has had the upper hand on defensive strategies, and then we have got entertaining championships with lot of “good” games. At present, defensive strategies are developing, with the consequence that it is not easy for teams to dominate with offensive strategies"¹²

Given that football is a low tech industry, we should also expect these waves between various strategies to be smaller by time. We then have two more hypotheses: H3: Choice of tactical strategies will move in waves depending on success, opponent’s strategies and available resources. H4: These waves – both size and length - will decrease by time.

Macro: The individualistic micro approach shows clearly that context should matter for choice of strategy. This is true because of a game theoretical dynamics, but it is also true because football is given meaning in light of the more general cultural struggles of modern societies,
based on functional and rational differentiation. The reason why football strategies appear as so fundamental and contested is that football ideologies (for some, now and then) reflect some deeper ideas of what a good life and a just society involves: “The tension – between beauty and cynicism, between what Brazilians call futebol d’arte and futebol de resultados – is a constant, perhaps because it is so fundamental, not merely to sport, but also to life: to win, or to play the game well?”

In historical sociological works on the history of ideas, we see that reason in the meaning of instrumentality – the iron cage of rationality - is repeatedly confronted by its “opposite”: moral or/and aesthetics, or more in line with the philosophy of sport: play. Such reflections of the overall cultural tensions of modern societies are (surprisingly) present, though not always very articulate and explicit, in football ideological clashes. As in most spheres of society, too much of the one, is met by a quest for the other. For football, the most obvious version of these cultural controversies is some type of instrumentality set up in some version against aesthetics, but is also reflected in demands for a more fair or authentic football. As such, H3 – choice of strategies will move in waves – is supported also by macro factors, but such waves will be more in line with general societal trends, and will not necessarily coincide with more strategic team-specific waves.

There are two more sides to the general theories of modernization as functional differentiation and rationalization relevant for studies of modern football. First, there is a widespread instrumentalization and marketization of modern football studied as commercialization. Second, there is the instrumentalization and scientification - professionalization in the sociological meaning of the term – of modern sports. Below I will discuss these processes as they come to the fore in organizations (at the meso level).

**Meso:** Individual strategies and societal trends tend to come together in organizations which are to be understood both as actors with their more or less strategic intentions, and as reflecting the more general process of modernization, where modern life to a great extent is rationalized – counted and accounted – in the form of organizations. Drillo appears as an una-
bashed Norwegian apologist for the instrumental and scientific side of modern football: we play football to win, and choose the best knowledge and means available. In sport, we find this as a quest for a more professional - systematic and scientific - approach, and this is, at present, a strong and global force. For one factual link between this type of professionalization and football style, Drillo assumes, and he is not alone in this, that the part of the game that is most fit to scientification is its defensive aspect: “At the national team we spend a lot of time on coaching defensive patterns, simply because it pays of most, and because we do not have the time to practice offensive interaction, apart from the obvious crystal clear guidelines for playing forward.”

This strengthens the loss-aversion hypothesis, but also adds one more dimension, stating that by time defensive football will dominate, which leads further to, which implies that the future will see fewer goals and less variation in goal scoring.

The increasing commercialization of football also has importance at the organizational level, and one could assume that this makes for a more offensive game as more goals are fun and will attract viewers, people and resources. At the same time, more resources involved would also make for a more precautionary approach - “strengthen the defence!” Again, the result of these developments will probably be along the lines suggested in and .

A factor linked to the commercialization of modern football is the symbiotic link to fans and media, which continuously struggles for attractive stories and news. Yesterday’s news is boring, and accordingly, the media are always attempting to bring down the old and prepare the ground for something new on the agenda. The result is a confirmation of the old theory of attention cycles. describes a wavelike movement in the media’s role when it comes to the Norwegian national team and their rather scientific, defensive and successful strategies: First as some kind of pedagogical interpreter, next as a facilitator of success, finally as helping with the fading out - a lack of enthusiasm strengthened by the lack of results.

Still another source of insight into the situation and development for football strategies are theories on organizational behaviour and change. Organizations could be seen in parallel to
individual actors who are looking for ways to achieve – win – with the most efficient use of their resources. Second, and in parallel to individual actors, organizations also orient themselves by more ideological or cultural external input. Whereas the resource mobilization approach is taken to produce diversity, the second approach – institutionalism – is, at least initially, taken as an argument for organizations to become more similar. Operating in environments with parallel rules and expectations for how to proceed (national and regional federations, FIFA), sharing similar ideas (increasingly more scientifically based) for how to develop organizations and improve the play, handling commercial pressure for success, as well as supporters’ dreams of victories all point towards organizational isomorphism. Third, more recent organizational theories tell a more complex story where a tendency to imitation is also met by attempts to innovate or stand out. The result of such continuous adjustments could be seen in smaller waves of strategic shifts regarding the basic ideas used to understand the football game. This is, again, supported by the fact that the football business is a low-tech industry where it is “easy” to catch up with competitors, strengthening H3 which states that football strategies will move in waves, but that by all signs (H4), these waves will get smaller – actors more isomorph – by time.

Taken together then, a sociological approach to the question of whether we should expect to find more or less of offensive or defensive football, how this mixture will develop and which strategy might end up as efficient, resulted in six hypotheses: H1: Without any factual game dynamic or influential context, we should expect a relatively even number of offensive and defensive teams. H2: Because of both individual and interactional factors, defensive strategies will be more popular, and by time (H5) prioritizing defence will be a more dominant strategy than attacking. H3: Choice of tactical strategies will move in waves, depending on success, opponent’s strategies, cultural fads and fashions and available resources, and (H4) these waves – both size and length - will decrease by time. H6: We should expect football to become meaner by time; we will see fewer goals and less variation in goal scoring.
Data, methods and cases

Units in the data applied in this study are clubs at the highest level in the Scandinavian male football leagues from 1949 to 2013, including numbers of games played, position in the tables and the numbers of goals scored and conceded ($N_{\text{Denmark}}=818$, $N_{\text{Norway}}=866$, $N_{\text{Sweden}}=848$). Data are collected from the web.\textsuperscript{32} The year 1949 is taken as the starting point, because the Norwegian football association had no truly national league until this time. This is also a time span long enough to establish some types of historical trends, but not too long to make sense of comparisons between periods. There have been several shifts in all three nations when it comes to how the top division has been organized: how many teams, whether the winner resulted from some type of end game and how many times each team met the other teams. There is also a shift in this period from two to three points for a win: Norway 1988, Sweden 1990 and Denmark 1995.

In most ways – politically, economically and culturally - the Scandinavian countries are rather similar compared to other nations\textsuperscript{33}, and football is an immensely popular sport in all three nations. When it comes to how sport is organized politically and in voluntary organizations, there are also to a large extent similarities, rather than differences, that prevail.\textsuperscript{34}

The Danish Football Association was founded in 1889, and in 2014 it organized 1,658 clubs with 329,955 members (Danish population: 5,634,437) of which 20% were women. At the time of writing, the Danish national team is 29 on the FIFA-ranking. Danish club teams have never made it to the top internationally, but the national team won the European Championship 1992, even though the team was actually not qualified. The Norwegian Football Association is younger – created in 1902 – and in 2012 organized 1,909 clubs with 364,940 members of which 29% were women. The Norwegian population is 5,124,383. The national team of Norway is at present ranked 64 by FIFA, and Norwegian football has, as stated in the introduction to this article, never really had any international success, except for a short period in the nineties when it was (for some obscure reasons) ranked by FIFA as the world's second best team. Norway is, nevertheless, named the most football-interested nation in the world.\textsuperscript{35} In 1904 the Swedish
Football Association was founded, and in 2013 they organized 3,189 clubs, and as they say themselves, about one million members (Swedish population: 9,684,858). Sweden is historically the most successful Scandinavian football nation, hosting the world cup in 1958, ending third, a result repeated in 1994. Swedish teams have had success at the European level. At present the Swedes are ranked 39 by FIFA.

The methods used in this article are frequency (means and variation) analyses and OLS-regressions. Since the purpose is to compare results over time, all results are presented in easily readable figures. There are two operationalisations worth discussing in this study. The first is how to measure offensive versus defensive (attacking versus defending) strategies, which is simply interpreted as number of goals scored/conceded. The main problem with this straightforward operationalization is the neglect of actors' intentions and the link between intentions and results. Given the large number of units and the long time span covered, the chosen operationalization nevertheless appears as the best choice. Second, outcome (efficiency) is measured by position in the league tables. An alternative could have been points, but position is considered a better candidate because it reflects the ranking of teams more clearly. In the final regression analyses, all measures are standardized to avoid the influence of number of teams/matches varying over time on the analyses.

Results

I have introduced several hypotheses to guide the empirical analyses above, and in this section I will address all of them. I will start with some basic facts about frequencies and variation in scoring/conceding in the three Scandinavian nations. Next, I will look into the question of whether the winners stand out with offensive or defensive (or both) qualities. The last part of this section will investigate how much offensive, and respectively defensive, qualities actually pay off regarding the position in the tables.
Prevalence of goals

At the core of a discussion of football strategies is the question of how many goals the teams are scoring/conceding and how large the differences in scoring are between the teams. Figure 1 (a-c) gives a clear indication as to developments with respect to scorings, and the main trend is downward: the numbers of goals decreases. Comparing the first five years of our data with the last five, gives a reduction of 25% in Sweden, 21% in Denmark and 12% in Norway. Looking at the OLS-regression-lines, the decrease is (accordingly) steepest in Sweden, followed by Denmark and Norway. For both Sweden and Denmark, the decrease seems to flatten out from about the 1980s, whereas Norway has a more peculiar Rosenborg-effect. While there was a short increase in scoring in all three nations from the 1980s toward the millennium shift, this increase was more massive in Norway. Variations in scoring frequencies are decreasing, but more continuous and similar across nations. Hence, the overall development is supporting H6 with both fewer goals and less variation between scoring between teams. On the one hand, this could be interpreted as meaner and perhaps more boring games, on the other hand, it points toward tighter and possibly more exciting games.

- Figure 1 a-c & Figure 2 a-c -

Who Wins: The Attacker or the Defender?

When it comes to winning the league, both Moskowitz and Wertheim and Anderson and Sally point out that there is a close race between being the team that scores the most and the one that concedes the least. In the Scandinavian case, there are no systematic patterns in answers to this general question (supporting H1). In Norway we find that for 36 (56%) of the years the most-scoring team is also the winning team, whereas “only” 30 (46%) of the least-conceding teams are also the winner. This is contrary for Sweden, where numbers are 30 most-scoring victories (46%) and 35 least-conceding (53%) winners. Also Denmark has, with this simple measure, a more de-
fensive tradition with 40 of the titles (62%) won by the least-conceding team, whereas 31 years (48 percent) see the most-scoring team as the winner. The numbers of winning teams being best with respect to both scoring and conceding have happened 14 (Norway), 13 (Sweden) and 16 (Denmark) times (between 20% and 25%) in the last 65 years. Together, these results point toward a relatively even distribution of scorers and conceders as winners, and this partly confirms 

**H1**: equal distribution of football strategies, although, we can also see indications of some systematic patterns for the scoring-data. Norway seems to have had a period of defensive qualities in the 1970s and a period of ‘total dominance’ in the 1990s-2000s. For Sweden, it is not that easy to detect patterns with this measure, but in Denmark the 1980s and the 2000s were dominated by defensive qualities, and the 1970s had a more offensive imprint. In short we see a tendency for various strategies to dominate different periods.

- Figure 3 a-c -

The preceding analyses are rather simple in their either-or logic. To allow for more complex patterns, I have developed a measure showing how much more – in percent – the winners score than the average team and, respectively, how much less the winners concede than the average team (per year). From this we get a more informative picture of the importance of offensive and defensive qualities. I have included two types of illustrations. First, we see in Figure 4 a-c a measure of offensive strength (the proportion of goals scored more than average by winners) in grey compared with defensive strength (proportion of goals conceded less than average by winners) in black. Where the grey colour is visible, it indicates that offensive qualities pay off, when black dominates it indicates that defensive qualities are more important. Figure 5 a-c shows the same pattern differently, where defensive strength is simply subtracted from offensive strength.

- Figure 4a-c & Figure 5 a-c -
What we see from Figures 4 and 5 more clearly is not only that winners represent offensive or defensive strategies, but also the extent to which they are in possession of these strengths. The next finding emerging from these figures is that (in many cases) we do not only have shifts between periods of offensive and/or defensive dominance; they also seem to have a wave format. The shifts are gradual, moving step by step towards more or less offensive/defensive dominance, thereafter gradually declining, and finally moving into its counterpart. These findings are supportive of H3 and H4.

All three Scandinavian countries have their periods of offensive and defensive dominance and the corollary waves between the situations, but the Norwegian case has the clearest wave pattern. Moving backwards in time, Norway is still living in a post-Rosenborg era. The last clearly offensive period was the Rosenborg dominance of the 1990s, preceded by a period where football in Norway was systematized and the focus was very much on defensive qualities, promoted by imported British and Swedish managers. Prior to this, there was a period in the 1960s, characterized by offensive dominance. There are of course exceptions to these trends, and for Denmark and Sweden such wave format patterns are not as large as for the Norwegian case, but they are nevertheless clearly present. Comparing the timing of the three cases, one possible interpretation of the data is that Norway, at least up to a certain point, is a football ideological latecomer; their main defensive period follows corresponding periods in Denmark (1950s) and Sweden (early 1960s).

Two more findings stand out from these figures. First, supporting H4, the waves are getting less intense (lower) and seem to fade out (negative regression lines). Looking at the colours in Figure 4 and supporting H5, black is more dominant by time: defensive qualities are winning out. Taken together there are smaller differences between teams, but there is a tendency for defensive qualities to be more important, especially in Denmark.
**How important are goals?**

The last question is how much scoring/conceding goals actually matters, and I answer this question through multivariate regression analyses which show how many positions are won by scoring or avoiding conceding goals. A main difference between these and the above results is that these include all teams in the study, whereas the previous analyses concentrated on the winners only. Figure 6 a-c shows, through regression coefficient for each year, how many positions further up on the league table one goal scored or one less conceded (both measures standardized) brings a team. The findings are mixed for scorings: they pay of less in Denmark by time, more in Norway and Sweden. Nevertheless, what is unanimous is the increased positive effect of not conceding goals which again clearly indicates the increasing importance of football's defensive competencies (H5). At the same time, as these effects are also moving in waves (H3), even though football is more defensive all over, within periods, there is (H1) a mixture of offensive and defensive strategies, and choice of strategy – out of context - in itself does not guarantee success or failure.

- Figures 6 a-c -

**Discussion**

Everyone interested in football will find, even in Norwegian football, an abundance of discourses stressing the conflict between different types of football strategies, basically, offensive or attacking strategies versus defensive strategies. In this massive literature, a link between these views and questions of beauty and efficiency are often seen as self-evident: attacking football is beautiful but not effective, defensive football is effective, yet disagreeable. The rationale for this study is, however, a lack of systematic knowledge on this topic. Accordingly, two questions were asked: How widespread are the two types of football strategies and what is the link between choice of strategy and outcomes? The data applied in this study is from Scandinavian male football and the teams in the upper division for the last 65 years.
As background for the understanding of the situation for offensive versus defensive football, some simple illustrations show clearly, first, a consistent and steady decline in the number of goals scored and a decreasing variation in number of scorings: meaner and more equal games. Second, the number of goals is on the wane, but the development has, even though there are differences between the three nations studied, a wave-like pattern. Third, the waves are getting smaller in both size and length by time.

A first and simple measure of the correlation between football strategy and success was the question of whether the winner of the league is the team scoring the most or conceding the least (or neither or both). The result is a relatively even distribution between winning by scoring or not conceding: scoring has been more important in Norway, whereas Danish and Swedish football has a more defensive imprint. Moving from the either-or way of asking this question to a more complex measure shows a wavelike and decreasing pattern. The winners shift rather systematically between offensive and defensive priorities, but, again, the sizes of these changes are decreasing by time.

A third set of analyses looks at how much scoring/conceding pays off in position in the leagues (for all teams, not only the winners). In Norway and Sweden, not Denmark, we see that goals are becoming increasingly more valuable. What is really striking is the increased effect on points for not conceding goals. In both cases there are wave-like forms in the development indicating a shift between offensive and defensive football within an overall defensive development.

There are several limitations to this study that should be improved in future research. Although scoring is a most significant measure of how teams play, it should be possible to include more information on what teams actually think and do, apart from factual scorings. The analyses in this article have partly addressed the winners, partly all teams, but it could be useful to distinguish between teams in a more complex way. The Scandinavian countries represent a narrow choice of cases, and it could be interesting to supplement these results with other nations.
Eggen and Drillo were introduced as the Norwegian representatives for well-known and enduring stances on football ideological questions. They also in many ways reflect the findings of this article: there is some kind of diffuse agreement that football employs various strategies that both have their advantages. Specific actors seem to have a proclivity to emphasize one at the cost of the other, even though they also admit that the opposite is worthwhile. Accordingly, we find developments and shifts in what appear as popular and efficient strategies. The two protagonists do of course operate in a specific historical context, and from this perspective Drillo seems – even though this is not always the impression gained from the media - to be the one representing the winds of the time. A more professional and scientific approach, strengthening the overall development of defensive football (fewer goals), exists at the same time as, at each time point, there is also a struggle between offensive and defensive strategies.
Endnotes:

5 Anderson and Sally, *The Numbers Game*, 151.
8 Moskowitz and Wertheim, *Soccercasting. The Hidden Influences Behind How Sports Are Played and Games Are Won*.
9 Anderson and Sally, *The Numbers Game*.
10 Kahneman, *Thinking, Fast and Slow*.
12 Olsen, Eggen, and Ulseth, *Det Viktigste År Alt Uviktig*, 149.

24 Wilson, Inverting the Pyramid: A History of Football Tactics.


26 This attitude might seem paradoxical, given that it is claimed that defensive play is more difficult to measure than offensive play Anderson and Sally, The Numbers Game.


35 Kuper and Szymanski, Soccernomics: Why England Loses, Why Germany and Brazil Win, and Why the U.S., Japan, Australia, Turkey and Even India Are Destined to Become the Kings of the World’s Most Popular Sport.

36 Moskowitz and Wertheim, Scorecasting: The Hidden Influences Behind How Sports Are Played and Games Are Won.

37 Anderson and Sally, The Numbers Game.

38 Goksøyr and Olstad, Fotball: Norges fotballforbund 100 år.
Literature


Figure 1 a-c. Average number of goals scored (conceded) per match. OLS regression lines and Lowess regression lines.

Denmark

Norway

Sweden

OLS reg. coef: -0.007 R-sq.

OLS reg. coef: -0.003 R-sq.

OLS reg. coef: -0.009 R-sq.
Figure 2 a-c. Variation (standard deviation) in number of goals scored (conceded) per match. OLS regression lines and Lowess regression lines.

Denmark

Norway

Sweden

OLS reg. coef = \(-0.003\)  
R-sq.
Figure 3 a-c. Whether the winner of the league is scoring the most (lines up) and/or conceding the least number of goals (lines down).
Figure 4a-c, Percentage of goals scored more (grey) and conceded less (black) than average scoring/conceding, 1949-2013.
Figure 5a-c, Offensive strength – defensive strength, 1949-2013. OLS-regression line, Lowess-regression line.
Figure 6 a-c. Effects of scoring and conceding on league table position (all three measures standardized) based on OLS-regression. Points are regression coefficients for each year, lines are OLS-regression lines. Points and lines in black for scoring, grey for conceding.