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# Goals Just Before Halftime Mean More - in Football and Business



By [Henrich Greve](#) , INSEAD

**Examining why 45th-minute goals have outsized importance reveals how timing can affect the outcome of virtually all sorts of competitions.**

Professional football is a low-scoring game in which each goal generally counts for a lot. Yet coaches, players and fans alike have long held that goals scored right before halftime weigh especially heavily upon the ultimate outcome of a match. The rationale is that a team that scores in the 45<sup>th</sup> minute receives a lingering taste of triumph, which gives them a distinct psychological edge as they head into the second half.

However, three previous studies cast doubt on the conventional wisdom, finding no pattern of goals before halftime being especially decisive. [The most recent of these](#) even found a slight negative effect for home teams. Yet the finding was based on a relatively narrow and anomalous dataset, drawn from only two international competitions: the UEFA Champions League and Europa League. A larger sample, comprising national leagues whose teams are more comparably counterpoised, could deliver a different result.

## Goals before halftime

That was the hypothesis behind our\* recently published paper in [PLOS ONE](#). We pulled data from the [World Football](#) website, which compiles goal timing and final outcomes for more than 300,000 matches during the period of study (1998-2016). We then filtered the dataset down to matches from top-level European and American national leagues for which betting odds were available (via the [BetExplorer](#) website). The betting information allowed us to control for the relative strength of the opposed teams in each match.

Our final dataset covered 72,426 matches. By contrast, the recent study finding a negative effect of goals before halftime sampled only 1,179.

We split the data according to the score for each match by halftime, so we could zero in on the games that were most representative of the entire sample, weeding out blow-outs suggesting extremely mismatched team pairs. The four most common scoring outcomes by halftime were 1:0, 0:0, 0:1 and 1:1 (each of the four encompassed more than 10,000 games). We compared how goals scored in minutes 1-44 were correlated with final match outcomes, relative to those occurring just before halftime.

In the 1:0 and 1:1 conditions, we saw statistically significant positive value for 45<sup>th</sup>-minute goals scored *by the home team only*, over and above the point on the scoreboard. In neither condition did a last-minute goal appear to have any excess value for the visiting team.

That the conventional wisdom held true only for the home team means that goals right before halftime indeed provide a unique emotional payoff. Beyond the competitive edge of starting the second half in the lead (which would be the case in both 1:0 and 0:1 conditions), there is an intangible advantage that comes from seeing and hearing an exultant hometown crowd roused out of their seats by the drama of a last-minute goal.

Unlike the preceding studies, ours detected the endgame impact of this hometown high, thanks to a much larger dataset. Our study, in short, was broad enough to capture a view of the forest, while smaller samples were waylaid in the trees of freak data.

## Competitive truths

In addition to the heightened drama of the 45<sup>th</sup> minute, we suspect there are other reasons why scoring at this particular moment is especially beneficial for home teams. In most competitions, loudly celebrated success generally has a downside for decision making: overconfidence. The high of a recent triumph dampens self-doubt and other second-guessing faculties that can help us make smarter choices. This is as true for professional footballers as it is for decision makers of all stripes – including executives.

We hypothesise that a pause in the action (i.e. halftime) coming on the heels of a high serves as a cooling-off period, allowing the euphoria to settle so that competition can resume without cockiness impairing people's judgment.

## **Managing teams**

What can managers learn from this? First and foremost, beware of overconfidence right after a big win, especially if the triumphant team or individual has been celebrated internally. It feels wrong to step away from the game after you have just scored big; most people will want to keep going and rack up more hits. But taking a break may be the best way to cement a fresh victory. Let cooler heads make decisions, and the team will do better.

This could also play into your organisation's rewards system. Instead of a bonus, perhaps top performers should be given mandatory holidays so they can savour their success and avoid hurting the firm through hubristic decisions. Alternatively, managers can tamp down overconfidence by establishing rational routines for recognising employees' accomplishments. A fast-fading ego boost such as a round of applause at a staff meeting may make more sense than an all-hands email announcement that may spawn a string of individual shout-outs. Again, the team needs cooler heads, so managers must make its members feel valued without creating too much self-confidence.

*\*Greve's co-authors were Jo Nesbø, [Nils Rudi](#) of Yale School of Management, and Marat Salikhov, a post-doctoral associate at Yale School of Management.*

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<https://knowledge.insead.edu/leadership-organisations/goals-just-half-time-mean-more-football-and-business>

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## About the research

**"Are goals scored just before halftime worth more? An old soccer wisdom statistically tested"** is published in *PLOS ONE*.