

Soccer is a sport regarded as more resistant to the "analytics revolution" that has transformed other major sports like baseball and basketball. This resistance is particularly intriguing in the context of the Moneyball phenomenon, where statistical analysis has been used to identify undervalued players and optimize team performance. In their 2016 study, Weimar and Wicker investigate whether similar inefficiencies exist in professional soccer, focusing on data from the German Bundesliga. Their findings reveal both the potential and the limitations of applying a Moneyball-style approach to soccer. While certain effort metrics, such as total running distance, show a positive impact on team performance, other factors, like the number of intensive runs, present more complex and sometimes contradictory effects. This essay will explore the main findings of Weimar and Wicker's study, and examine why soccer, with its unique dynamics and deeply ingrained traditions, may be more resistant to analytical approaches than the data-driven environments of baseball and basketball.

For starters, the study found a positive and significant relationship between total running distance (DIST) covered by a team and the likelihood of winning a match. Specifically, the analysis showed that if a team increased its average running distance by 1 kilometre compared to the opponent, the probability of winning the match increased by approximately 26-28% (as observed in Models 1-3) (page 152). This finding suggests that running distance is a critical factor in determining a team's success on the field.

This is also reflected by the positive and statistically significant coefficient of **0.319** for the average distance covered by players of the observed team compared to the opposing team DDIST (Difference in Running Distance) (Model 7, page 151). The coefficient is positive and statistically significant ( $p < 0.01$ ), indicating that an increase in the running distance relative to the opponent significantly increases the team's probability of winning the match.

Despite this, the authors find that running distance does not significantly impact player market values. This finding draws a parallel with the concept of marginal revenue product (MRP) discussed in class (Chapter 6), which states that a worker (or player) should, in theory, be paid according to their contribution to the firm's (or team's) revenue.

The concept of Marginal Revenue Product (MRP) helps in understanding how athletes, like any workers, should theoretically be compensated based on their contribution to their team's revenue. The MRP is calculated as the product of two components:

- Marginal (Physical) Product (MP): This represents the athlete's contribution to team outcomes
- Marginal Revenue of Output (MRQ): This reflects how much additional revenue each win generates for the team.

In the context of Weimar and Wicker's study on the Bundesliga, this concept of MRP is relevant because the study suggests that certain player contributions—specifically running distance—are not properly valued in the market. Although these contributions significantly improve team performance (as indicated by positive coefficients in regression models), they do not translate into higher player salaries or market values. This reflects a potential market inefficiency, where players are not compensated in line with their true MRP, particularly because the revenue-generating impact of these "hidden" metrics like running distance is not fully appreciated by teams and scouts.

As well, the article also looked at DRUN (Difference in Intensive Runs) as a measure of team success. DRUN Represents the difference in the number of intensive runs (runs >20 km/h) performed by the observed team compared to the opposing team. In model 7, the coefficient for this variable is shown as -0.008. Interestingly, the coefficient for DRUN is negative but still statistically significant ( $p < 0.01$ ). This suggests that while intensive runs positively affect performance when considered alone, their effect becomes negative when combined with total running distance. This could imply that excessive focus on intensive runs without sufficient overall distance coverage might not be beneficial and could even be harmful to a team's success.

When discussing reasons for soccer's resistance to analytics, Weimar and Wicker point out that the flow of the game is continuous, and individual contributions are harder to isolate than in sports like baseball, where plays are discrete and easier to quantify. Unlike baseball, where each action (like a pitch or at-bat) is a separate event that can be easily measured, soccer involves constant movement and interactions between players that are difficult to quantify with simple statistics.

As well, traditional soccer statistics, such as goals and assists, capture only a small part of a player's contribution to the team. Weimar and Wicker's study suggests that metrics like running distance are undervalued in the market, but these metrics are also harder to directly link to revenue generation (MRQ) compared to baseball, where statistics like on-base percentage are directly correlated with runs and wins.

Going back to the MRP concept from class, measuring a player's Marginal Product (MP) in soccer is more complicated because, as stated in the previous paragraph, the sport has very fluid play and team dynamics that are more collective. Soccer players' performance is also highly interdependent, making it difficult to attribute success to individual efforts. Unlike in baseball, where a player's actions (like pitching or hitting) have a clear and direct impact on the game, soccer outcomes often depend on the collective performance of the team. This makes it challenging to calculate an individual's Marginal Revenue Product (MRP), as their contribution is closely tied to the actions of their teammates and the overall strategy.

Soccer also has very deep-rooted traditions and a culture that often prioritizes quality and experience over quantitative analysis. As noted in the study, Bundesliga scouts and decision-makers tend to rely more on personal observations and subjective judgments than on player statistics. This reflects a broader resistance within the soccer community to adopt analytical methods, which are perceived as undermining the "art" of scouting and coaching. Soccer's global nature introduces additional complexity in player valuation, as market inefficiencies vary widely across different leagues and regions. The various economic conditions and competitive structures in global soccer mean that adopting a uniform analytical approach, like the one in Moneyball, is less straightforward.

In conclusion, while the analytics revolution has seriously transformed sports like baseball and basketball, soccer remains more resistant to such data-driven approaches. Weimar and Wicker's 2016 study on the German Bundesliga highlights both the potential and limitations of applying Moneyball-style analytics to soccer. Their findings demonstrate that certain effort metrics, such as total running distance, significantly enhance team performance, yet these metrics are undervalued in the market. However, soccer's unique characteristics, such as its continuous flow of play, the interdependence of players, deep-rooted traditions and reliance on

subjective judgment present significant challenges to adopting analytics in the same way as baseball or basketball. Ultimately, while the study points to untapped opportunities for applying analytics in soccer, the sport's inherent complexities and cultural resistance suggest that any shift towards a data-driven approach will likely be gradual and require a careful balance between quantitative analysis and the traditional "art" of the game.

## Works cited

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