

# An Economic Analysis of Fair 'Target Resetting' in Cricket During Rain Interruption Situations

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## Abstract

The main objective of this study was to build a new rain rule for World Cup Cricket by taking into account the competition level of the matches in World Cup tournaments. In this attempt particular changes in scoring pattern of ODI matches in a World Cup tournaments compared to other ODI matches, as well as analytical factors that influence the probability of winning the match were considered.

The economic aspect of cricket is one of the most important focal points after commercialization of cricket. Making a decision regarding the winner or target in rain interruption is a most critical decision making situation in ODI. The match referees, team captains, players and spectators have been confused by some decisions in ODI history. Fair decision making was a need during rain interruption, because some game schedules do not facilitate to replay match on another day.

Duckworth-Lewis (DL) method is the current rain rule in both ODI and T20 cricket. The literature shows a number of alternative methods that have been introduced by several researchers to address some of these weaknesses of D-L method.

The new rain rule consisted of five transition probabilities in dynamic programming frame work. The transition probabilities are estimated by probit and ordered probit regression procedure. The data set of this research was drawn from all matches (between test counties only) in 2011 World Cup as secondary data. The main contribution of this study was introduce a new variable called "competition level" in to the rain rule. The new method succeeded in quantifying the opportunity cost of lost overs in rain interruption in terms of runs. It proves that the proposed method produce a fair decision than the D-L method. In World Cup Cricket, it is better to rethink the current rain rule because the approximations are not successful due to limited consideration of predictable factors that can affect the playing behavior in Word Cup Cricket.

**Key Words:** *Fair Target, Dynamic Programming, Cricket, Winning Probability, Statistical Analysis of Cricket*