Andrey Shelopugin, Alexander Sirotkin

Rating of European leagues based on Glicko-2 with modifications

One of the key problems of football analytics is to predict the adaptation of a player in the new championship. Supposing, a player shows high performance playing for a league. But would he play as well as previously in other leagues? The possible solution is to assess the level of the championship.

There is, of course, the UEFA rating. However it does not take into consideration the levels of rival teams, so a win over a weak team gives the same points as a win over the strongest team. Moreover, the UEFA rating lacks interpretability and takes a lot of time to update. Also this rating can not give a clear vision of the Second league teams’ efficiency.

In this article we calculated the ratings of First and Second European Leagues. Model was trained on results of matches of First and Second European Leagues, national cups and supersups and eurocups for the last four seasons. The data was collected from flashscore.com. Walkovers and matches of the third League were not used. It is used in approximately 80000 matches.

We chose Glicko 2 as the base model. Originally Glicko 2 could not be applied to football, particularly because it can not calculate the probability of the draw. Therefore we propose next improvements to it:
- Home field advantage is used as a feature
- The model can calculate the probability of the draw
- The model takes into considerations that teams may become stronger or weaker after the transition from league to league
- It made a few changes to ratings initialization and calculation of the rating deviation parameter

The rating described above still can not fully cope with the assessment of the players’ adaptation. However it can be quite useful in the planning of the winter transfer window. It gives the possibility to simulate the rest of the season and evaluate the odds of the Eurocups qualification. Football clubs can use this rating to decide whether the team needs new players.