

SALARIES AND DRAFT PICKS

Sports teams have great use for statisticians. Statisticians have analyzed sports relations in some excellent studies, with results that seem surprising at first but make sense.

Illustration: One might think a high draft pick should help a team become more profitable, because a star player increases attendance at games. But two items offset this relation:

- ~ Better players get higher salaries.
- ~ Many high draft picks are over paid. Lower draft picks are priced more accurately.

We use several measures to determine a player's contribution to a team's success. We relate the player's draft pick to his salary and his contribution to the team's success.

Illustration: A first draft pick costing \$2 million a year is like two lower draft picks costing \$1 million a year each. A statistician may examine which option is economically better.

A study of pro football concluded that high draft picks are so over-priced that their average effect on the team's financial performance is negative. The best ratio of performance to price is at the 46th draft pick. This suggests that the entire first round of draft picks are poor additions to the team. If the team has a limited budget, the optimal strategy is to trade the first round draft pick for two or three lower draft picks or for slightly older players whose performance can be better estimated. The team's performance will improve.

{We mention this to show the use of statistics. An actuary with a sound understanding of statistics might consult for professional sports teams to optimize trading strategies.}

Other factors affect won-loss records, such as the budget for players' salaries. High salary budgets in New York and Boston help keep baseball won-loss records high. We don't have a good public source for salary budgets, but many baseball fans know the relative sizes of these budgets. A higher budget may *raise the intercept* in the regression equation. If you find this effect for certain teams, and you can differentiate among the teams by salary budget, you can analyze this effect. The effect of salaries on team performance is debated, and a student project on this topic is worth doing.

The free-agent rule makes salary budgets more important. If players can't choose among teams, salary budgets have less effect.