

Project Luther Proposal

What is the value of your MLB rookie?

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Scope

Every MLB rookie can be a free agent in 6 years of service time. Each owner would much rather pay their young players long term who will also provide value long-term, rather than waiting until free agency. The inherit risk of waiting until free agency is the rookie underperforms their peers, and thus is over-paid for their value. Ideally, the player over-performs for the contract signed prior to free agency epoch. Can you predict the free-agency value of a rookie batter? The value would be an upper bound salary to then use in negotiations with current rookies.

Methodology

1. Get all rookies starting in 1985 to present. Salary information on baseballreference.com could be incomplete prior to 1985.
2. Get all statistics for the rookie players.
3. Build a linear regression model relating batting statistics to salary at year 6.

Data

- Salary data by player by year (service term > 5 is free agent contract)
- List of rookies by MLB season
- fangraphs.com / baseballreference.com / <http://legacy.baseballprospectus.com/compensation/cots/> (detailed salary data)

Prediction

Salary of a player after 6 calendar years from MLB debut.

Features

Features of the rookie player to be predicted.

Feature	Description
AVG	Batting average
HR	Home runs
H	Hits
R	Runs
SB	Stolen Bases
TB	Total Bases
2B	Doubles

Feature	Description
3B	Triples
RBI	Runs batted in
BB	Walks
SO	Strike outs
Postion	Main position played (categorical)

Things to consider

- Need to adjust for inflation and use a logarithmic scale for salaries.
- Impact of contracts provided prior to the free agency year.
- Adding sabermetric type measurements as features.