BTM301 Class Project
Effects of Performance and Non-performance Factors on AAV of Free Agent contracts in Baseball

Team 1

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December 7, 2024

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Introduction

Background

- Free agent contracts in baseball are determined by various factors
- Performance and non-performance factors are considered
- Performance factors include statistics like ERA, OBP, etc.
- Non-performance factors include team attendance, salary cap usage, etc.

Model

Hitter Model

$$\log AAV_i = \beta_0 + \beta_{WR} WR_i + \beta_{Atd} Atd_i + \beta_{SU} SU_i + \beta_L L_i + \beta_{AGE} AGE_i \\ + \beta_{OBP} OBP_i + \beta_{SLG} SLG_i + \beta_{PA} PA_i + \varepsilon_i \quad (1)$$

where:

- AAV_i: AAV of free agent contract
- WR_i: Win rate of the player's last team before free agency
- Atd_i: Average attendance of team the player signed with
- SU_i: Last season's salary cap usage of team the player signed with
- L_i: Left-handedness of the player
- AGE_i: Age of the player
- OBP_i: On-base percentage of the player
- SLG_i: Slugging percentage of the player
- PA_i: Plate appearances of the player

Model

Pitcher Model

$$\log AAV_i = \beta_0 + \beta_{WR} WR_i + \beta_{Atd} Atd_i + \beta_{SU} SU_i + \beta_L L_i + \beta_{AGE} AGE_i$$
$$+ \beta_{ERA} ERA_i + \beta_{WHIP} WHIP_i + \beta_{SO} SO_i + \beta_{IP} IP_i + \varepsilon_i \quad (2)$$

where:

- AAV_i: AAV of free agent contract
- WR_i: Win rate of the player's last team before free agency
- Atd_i: Average attendance of team the player signed with
- SU_i: Last season's salary cap usage of team the player signed with
- L_i: Left-handedness of the player
- AGE_i: Age of the player
- ERA_i: Earned run average of the player
- $WHIP_i$: Walks plus hits per inning pitched of the player
- SO_i: Strikeouts of the player
- IP_i: Innings pitched of the player

Data

Results

Discussion

Conclusion