Receiving a top-five pick in the NBA lottery leads to success

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Introduction

- To acquire a top collegiate prospect, an NBA team needs to be near the bottom of the league in terms of success
- Losing demoralizes the franchise, fanbase, and the players leading to losses in revenue
- Is this losing for a highly touted prospect worth it?

Literature Review

- Higher draft position is associated with higher win shares over the career, and in the first five years

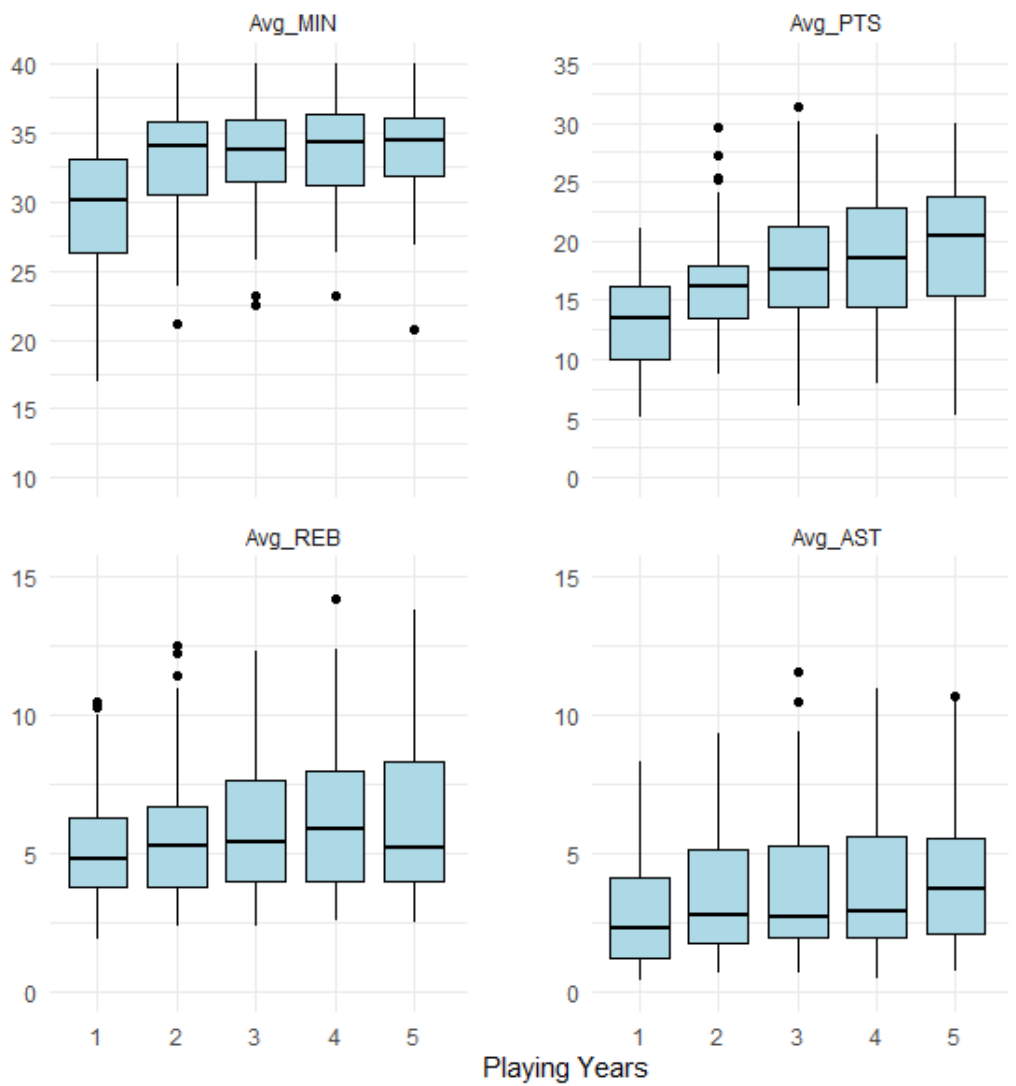
- High draft picks have a significantly higher likelihood of becoming All-Stars
  - Top 5: 40%
  - Lottery: 27%
  - Rest: 7.5%

- Top 10 draft picks have a greater chance of postseason success
  - Conference Finals: 212 to 87
  - Finals: 115 to 87
  - Champs: 56 to 43

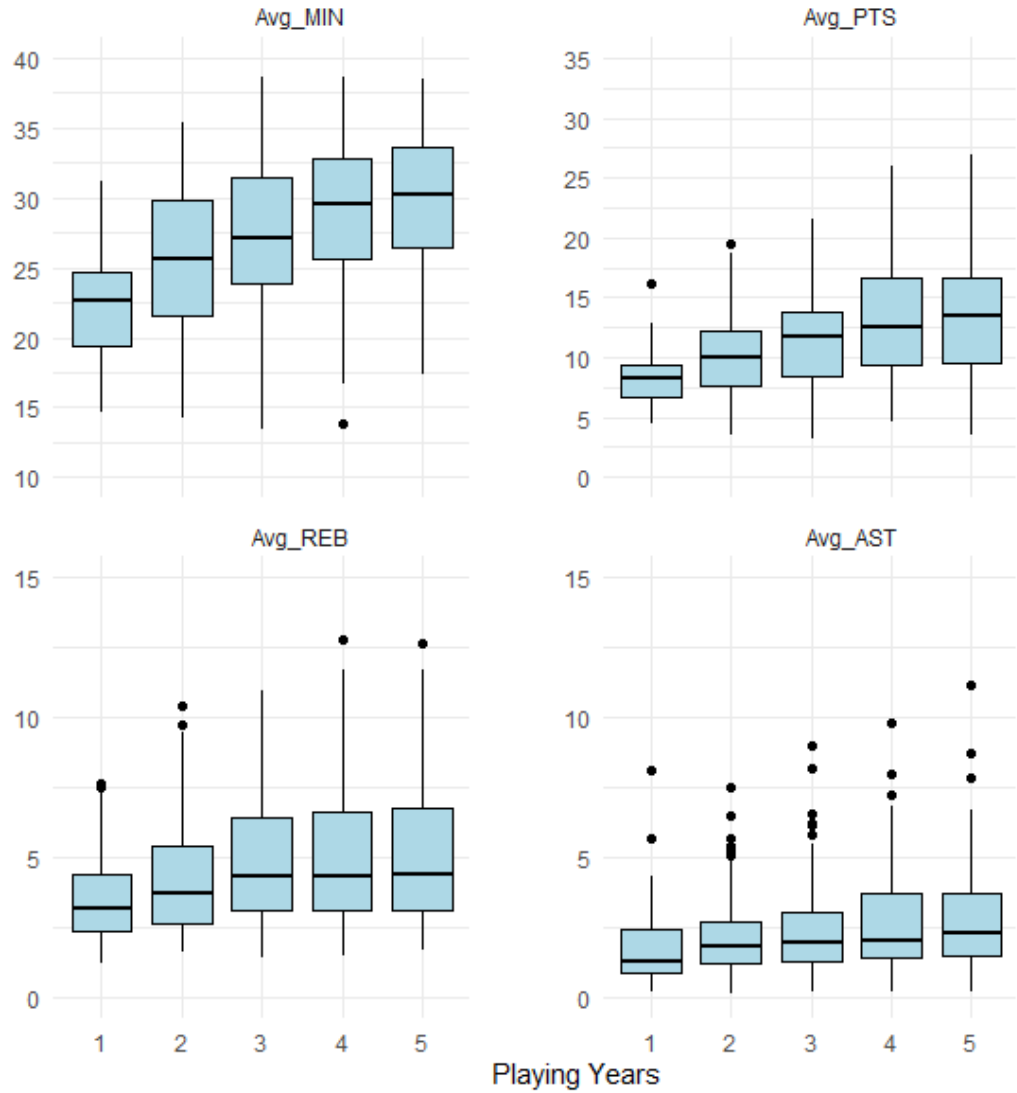
Data

- 4 data sets: regular season wins, playoff success, historical draft data, & player statistics
- Time frame of this analysis: 2000-2023
- Drafted team is adapted to be the team the player played their first season with rather
  - Ex: Kobe Bryant was drafted by the Hornets, but only played with the Lakers

Top-Five



Non-Lottery



Models

OLS Regression for Regular Season Winning %

$$WinsYear3_{i,t+2} = \beta_0 + \beta_1(Top5Draft_{i,t}) + \beta_2(RookieWins_{i,t}) + \beta_3(Lag1_{i,t-1}) + \beta_4(Lag2_{i,t-2}) + \beta_5(BigMarket_i) + \epsilon_{i,t}$$

Negative Binomial Regression for Playoff Wins

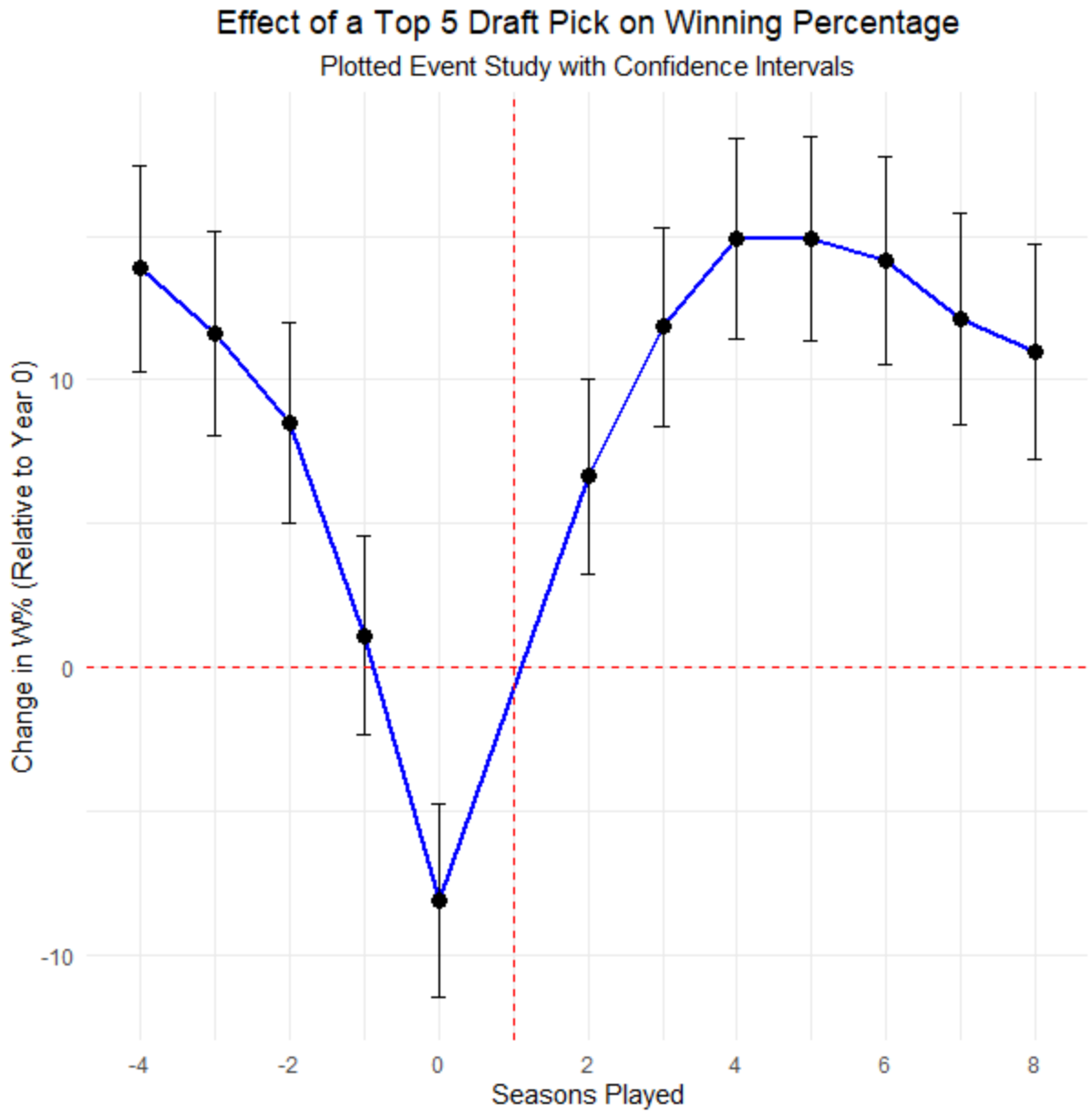
$$PlayoffWinsYear3_{i,t+2} = \exp\left(\beta_0 + \beta_1\left(Top5Draft_{i,t}\right) + \beta_2\left(RookiePlayoffWins_{i,t}\right) + \beta_3\left(Lag1_{i,t-1}\right) + \beta_4\left(Lag2_{i,t-2}\right) + \beta_5\left(BigMarket_i\right) + \epsilon_{i,t}\right)$$

Event Study for Regular Season & Playoff Wins

$$Wins_{i,t} = \beta_0 + \sum_{k=-4}^{8} \beta_k P(EventTime = k) + \gamma_i + \delta_t + \epsilon_{i,t}$$

Event Study

- Centered on rookie season
- Winning percentage decreases going into the top five draft pick year
- Large jump in year 2, positive trend loses steam in year 6



Regression Analysis

OLS Regression on Regular Season Win%

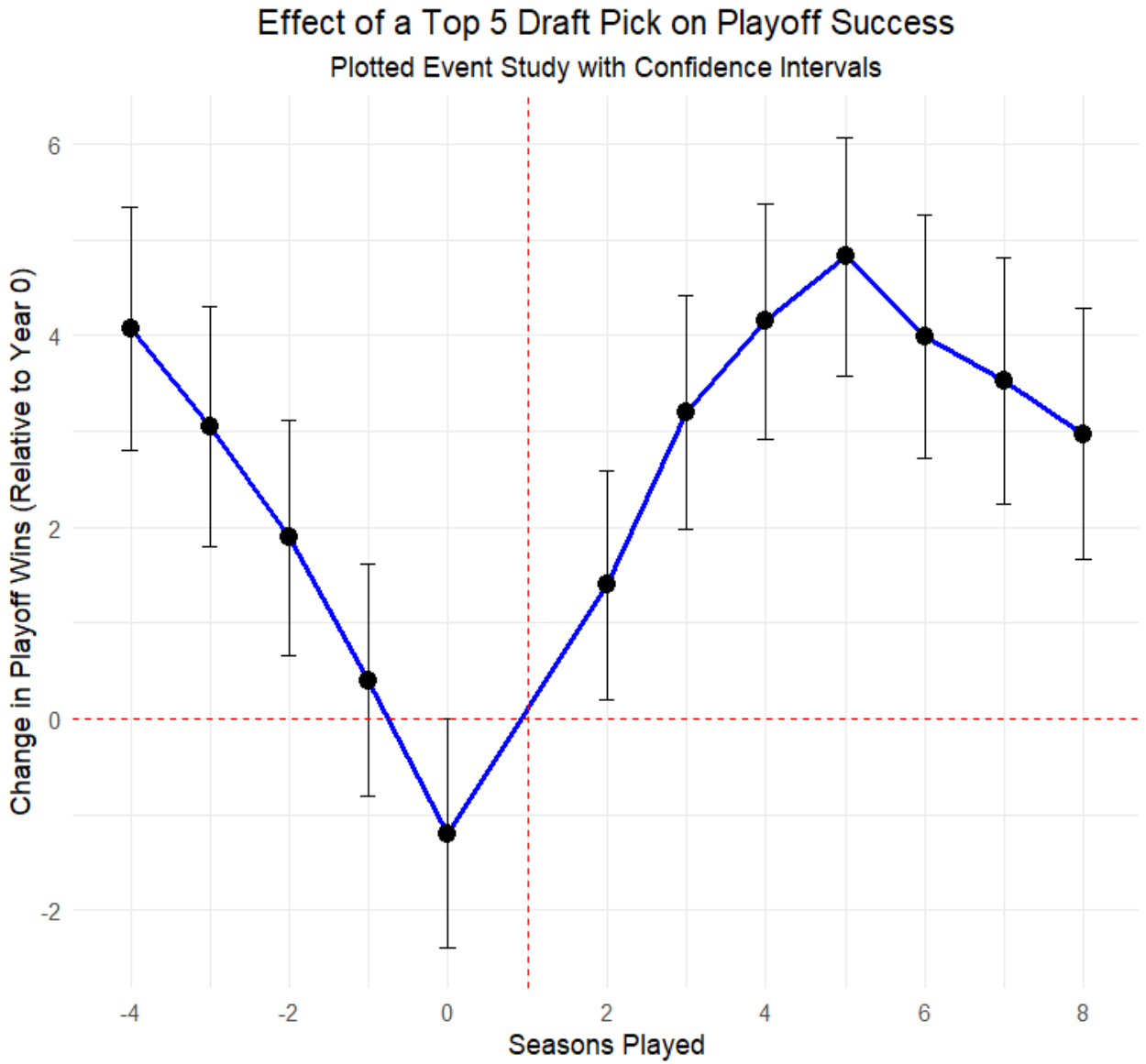
	Year 2	Year 3	Year 4	Year 5	Year 6
Top 5 Draft	0.012 (0.016)	0.036 (0.019)	0.052 (0.021)	0.035 (0.022)	0.028 (0.023)
Significance	NA	.10	.05	NA	NA

OLS Regression on Regular Season Win% with Market Control

	Year 2	Year 3	Year 4	Year 5	Year 6
Top 5 Draft	0.012 (0.016)	0.037 (0.019)	0.053 (0.021)	0.036 (0.022)	0.029 (0.023)
Significance	NA	.10	.05	.10	NA

Event Study

- Centered around rookie season with –3 playoff wins
- Expected to make the playoffs in year 3
- Year 5 predicts 2-3 playoff wins, close to a first-round win



Regression Analysis

Negative Binomial Regression on Playoff Wins with Market Control

	Year 2	Year 3	Year 4	Year 5	Year 6
Top 5 Draft	-0.175 (0.195)	0.238 (0.203)	0.238 (0.053)	0.385 (0.052)	0.188 (0.056)
Significance	NA	NA	.01	.01	.01

- Centered around rookie season with –3 playoff wins
- Coefficients are not percentages, they are in log-odds
  - Year 4: 26.8% increase in playoff wins
  - Year 5: 47%
  - Year 6: 20.4%

Conclusion

- Acquiring a top-five draft pick positively impacts regular season and playoff success
- A top-five pick has the most significant impact in years 3-6
- Future research could include more controls about player movement, luck in the draft, more advanced statistics, and more