TENNIS BETTING MARKETS

Applied Econometrics: Politics, Sports, Microeconomics
Introduction

- **Murphy v. National Collegiate Athletic Association**
  - Federal ban on sports betting struck down May 2018 (beyond NV)

- **COVID-19 Pandemic**
  - U.S. revenue of $1.5 bn in 2020, up 69% y/y
  - 2021Q1 revenue up 270% from last year

- **Efficient markets hypothesis**
  - More market entrants, more competition → more efficient markets
Hypothesis

- Measures of market efficiency increase after the COVID-induced betting craze
  - More competition
- Or, markets could become less efficient:
  - During the time period of interest, more/less skilled bettors join as participation grows
  - Less information (particularly at the beginning of the pandemic)
Previous Literature

- Lots of previous research on market efficiency
  - Favorite-longshot bias
- Tennis betting markets
  - Match fixing
  - Lots of data: markets are even made on the scoring within individual games
- *The Impact of COVID-19 on Sports Betting Markets* (Qureshi, Zaman)
  - NBA moneyline betting markets
  - Inefficiency, hypothesized to be due to lack of live audiences
Data

- Annual ATP/WTA match data up to 2021
  - Includes match results and betting odds
    - bet365, Pinnacle Sports
  - Derive implied odds from betting odds provided & eventually compare to actual performance
- Potential subsets into Tournament Series (Grand Slam vs. ATP250), Tournament Round (1st round vs. final), men’s vs. women’s markets

(Stern 2008)
Methodology

- Simple OLS with regression discontinuity design

\[ Y_i = B_0 + \beta_1 X_i + \beta_2 \times 1(COVID = TRUE) + \epsilon_i \]

- RDD
  - Linear vs. nonlinear models
    - Wary of nonlinear relationships taken to be a discontinuity
  - Contamination by other treatments
    - Investigate whether other variables change discretely at the cutoff when they are not supposed to
Potential Pitfalls & Next Steps

- Assumptions of regression discontinuity model
  - Time frame of “jump”
- How best to measure market efficiency?
  - Robustness tests with different efficiency measures
- Expand scope of the project