

Thesis Assessment - “Essays on Sports Economics” by Radek Janhuba

Brad R. Humphreys*
West Virginia University

June 3, 2018

1 Chapter 1: Do Victories and Losses Matter? Effects of Football on Life Satisfaction

1.1 Summary

This chapter assesses the relationship between unexpected outcomes in sporting events and self-reported life satisfaction. A growing literature examines the impact of sporting events on external outcomes triggered by emotional queues. This chapter links data from the Behavioral Risk Factor Surveillance System (BRFSS), a nationally representative US survey which contains questions on life satisfaction as well as the date the survey was completed and the county of residence of the surveyed individual, to counties with large numbers of fans of specific college football teams using social media from Facebook. The results show that unexpected wins at home increase the self-reported life satisfaction of fans of the home team, but unexpected losses have no impact on self-reported life satisfaction. The results are robust to a number of plausible alternative model specifications and the inclusion of potential mediating variables in the model.

1.2 Assessment

Early research clearly linked the outcome of sporting events to external economic outcomes like stock market performance. Understanding the full reach of the impact of sporting events on the economic is important because sports plays an outsized role in modern society. An important paper by Card and Dahl (*Quarterly Journal of Economics* 2011) used a reference-dependent preference approach to show that unexpected negative outcomes in National Football League (NFL) games caused increases in domestic violence in cities that are home to teams, providing evidence of substantial negative externalities associated with sporting events. This paper extends the Card and Dahl work in several important directions.

College football has more fans than the NFL so understanding external impacts of college football games suggests that the Card and Dahl results extend to a wider segment

*Department of Economics, College of Business and Economics, PO Box 6025, Morgantown WV 26506-6025; email: brhumphreys@mail.wvu.edu; phone: 304-293-7871.

of the population. The extent to which negative and positive emotional queues generate important changes in factors like life satisfaction is not well understood so this paper moves the literature on behavioral economics forward. The paper shows outstanding ability to put together multiple data sets to address an interesting question. The paper is competently executed.

The paper is very well written. I have no comments or criticisms on the exposition. The empirical work is thorough and convincing. It shows innovative use of appropriate data and uses the correct methods. The results are important, in that they further demonstrate the wide reach of sports events on society. In my opinion, this paper will be published in a top general interest economics journal with international readership. It makes contributions to the literature in sports economics and behavioral economics.

2 Chapter 2: Criminals on the Field: A Study of College Football¹

2.1 Summary

This chapter analyzes the relationship between policing and the commission of violations in the context of American college football. It exploits a change in the number of officials on the field in a single football conference as an exogenous change in the quantity of policing. The results indicate more penalties were called by the added officials in their area of responsibility. The results also indicate a deterrence effect of additional policing, although the impact is heterogeneous in that deterrence only operates for teams with high ability, an interesting result.

2.2 Assessment

Research on the effectiveness of policing has long been carried out using data from sports. As far back as McCormick and Tollison (*Journal of Political Economy*, 1984) economists have exploited exogenous changes in the number of officials refereeing team sporting events to assess the impact that increases in policing might have on the commission of crime. In the sports context, referees are analogous to police and penalties committed by athletes are analogous to crimes. This chapter takes a similar approach in a different setting: American college football.

This chapter exploits a change in the number of referees on the field (from 7 to 8) in a single conference on specific forms of prohibited behavior by football players to better understand the impact of policing on crime. The chapter contributes to the law and economics literature and the sports economics literature. The chapter uses a novel data source describing individual plays in football games. Much of the previous literature uses temporally aggregated data – data aggregated to the game level – to address this question.

The use of temporally disaggregated data is a novel contribution in this paper. Using temporally aggregated data masks the dynamics of the enforcement process, as adjustments can be made in a team's style of play, much like criminals could adjust their mode of committing crimes or the timing of their crimes in response to changes in policing. The use of temporally disaggregated data avoids this problem, leading to deeper insights

¹Jointly authored with Kristýna Čechová.

into the policing/crime relationship. Also, the paper exploits an interesting institutional feature of this change in the number of officials: the change occurred in only some games (those played between teams in one specific conference). This provides additional exogenous variation in policing, strengthening the results.

This chapter shows an excellent grasp of institutional context which generates strong results about an important research question. The empirical methods are appropriate, and the results are believable. The chapter contains a large number of robustness tests that shows excellent empirical skills. Since the policing/crime relationship has general interest, and the paper is very well written, I think this paper has a good chance to be published in a top journal in law and economics.

My only quibble with the chapter is that I think it could discuss the relationship between this micro-data approach and the one taken in a recent paper of mine [DeAngelo, Gregory, Brad R. Humphreys, and Imke Reimers. “Are public and private enforcement complements or substitutes? Evidence from high frequency data.” *Journal of Economic Behavior & Organization* 141 (2017): 151-163.] This paper addresses a different issue (community enforcement of laws) in a different setting (professional ice hockey) using similar high-frequency data.

3 Chapter 3: High Bets for the Win? The Role of Stake Size in Sports Betting²

3.1 Summary

This chapter analyzes individual decision making under uncertainty using data on a large number of bets made clients of a Czech bookmaker. Little is known about the behavior of individual bettors because of a lack of data. This chapter analyzes multiple bets placed by individual bettors over time and shows that the most successful bettors alter the size of their bets in a way that increases the net return earned on these bets. The result is robust to the inclusion of bettor fixed effects. This result is consistent with financial motivations for individual participation in betting markets, but not with consumption or utility maximizing motivations.

3.2 Assessment

Research on sports betting provides important insight into behavior in financial markets because a bet on a sporting event is a simple financial asset that has a clear expiry date and payoff structure. Because bets on sporting events resemble other financial assets like stocks and bonds, a sizable body of research on sports betting exists, and much of the early evidence supporting financial market efficiency came from data on sports betting. Understanding outcomes in sports betting markets recently became even more important, and policy relevant, because sports betting was legalized throughout the United States in May 2018; previously it was legal only in the state of Nevada.

This chapter makes an important contribution to our understanding of the behavior of individual participants in sports betting markets. Almost nothing is known about the behavior of individual bettors because of a lack of data. This is one of a mere hand full of papers to analyze data on bets placed by individual participants in this market.

²Jointly authored with Jakub Mikulka.

The paper first documents that bettors strongly prefer to wager on multiple sporting events, rather than on a single sporting event, and second shows that more skilled (i. e. successful) bettors systematically vary the number of events they bet on and the size of the bet in a way to increase net return. To my knowledge, both these observations are novel in the literature. I find the chapter to be competently executed and interesting. The empirical analysis is strong, the general approach is good, and the literature review and explanations for the results convincing.

I have several suggestions for improving this chapter detailed below:

- The result that successful bettors vary stake size in a way that increases net return is evidence that these bettors have a financial motive for wagering on sporting events. Other evidence suggests that bettors have a consumption motivation for betting (Conlisk's "utility of gambling" model). This evidence includes Bettors tendency to bet on favored teams and high-scoring outcomes, and to bet more on games on television. A short discussion of this should be added to the paper.
- In the discussion of channels (section 3.5.3 on page 102) it would be helpful to have information on which betting channels were used by individual bettors. Do bettors use only one channel? Or do they mix channels (internet and phone, for example)?
- The tables are a bit difficult to read, with many long, small numbers. Some rescaling of the explanatory variables would fix this (eliminating parameter estimates like .000339). Also, the estimates should be rounded to three digits to improve readability.
- Page 96: I don't think that parlay betting was legal in Maryland. I think you mean Delaware.
- Page 96: "the median gives a better picture of what an average ticket looks like." Should be "what the typical ticket looks like."
- Page 96 last sentence "This difference is attributed by the" should be "This difference is attributed to the"
- Page 101: "the level of the coefficient is quite low" should be "the size of the coefficient is quite low"

4 Overall Assessment

In my opinion this thesis clearly satisfies formal and content requirements for a PhD thesis in economics. The research is competently executed and makes a number of clear and important contributions. This is a very good thesis. Mr. Janhuba clearly demonstrates an ability to perform high-quality economic research. I recommend the dissertation for defense.

All of the comments and suggestions above are aimed at improving the papers. None are required changes needed to make the dissertation acceptable. In my opinion the thesis is acceptable as written.