Do Excitement, Winning, and Losing Impact Risk-Taking? Evidence from the National Hockey League

Alexander Davidson, Wayne State University
Scott Tainsky, Wayne State University
Matthew D. Meng, Utah State University
Mitchell C. Olsen, Notre Dame University

Finance/Economics - Economics (Professional Sport)  Abstract 2021-256
20-minute oral presentation (including questions)  Mode: Asynchronous
Session: Live Q&A for Finance/Economics (Asynchronous)  Saturday June 5, 2021, 1:40 PM - 2:40 PM

Background, Significance, and Literature
This study investigates how scoring impacts betting patterns of attendees at National Hockey League (NHL) games. The 50/50 raffle, a game of luck whereby 50 percent of the pot is offered to charity with the other half allocated to the winner, is a staple in the NHL and throughout major North American sports leagues. Although bettors may be aware of the particular charitable beneficiary, administrators assert that the primary motivation is personal financial winnings (personal correspondence). As attendees may not play at all or risk sums varying from $5-100, we are able to detect patterns in the very decision to enter the raffle as well as wager size according to various conditions. Given the parallel line of research that has established how BIRGing and CORFing (Cialdini et al., 1976) may lead to deleterious behaviors (Mills et al., 2018), not only can the current study inform managers on how to maximize 50/50 volumes, but also provide a better understanding of the conditions by which fans are more (less) likely to engage in risk-taking behaviors.

Data & Method
A proprietary dataset detailing all 5050 transactions for an NHL team across two seasons of home games were combined with publicly-available box scores. We analyze the progression of raffle funds raised per capita over the course of the game and account for the different game periods, intermissions, and changes in score in real time. This resulted in 573 intervals (433 during gameplay, 140 intermission) across 70 home games.

The outcome variable, amount per transaction (APT), was calculated as total sales per minute, per transaction, per attendee.

We specify several models of scoring including goals for (GF) and goals against (GA), total goals, score differential, and scoring momentum along with a set of variables controlling for game effects, time effects, and ex ante expectations of scoring and winning. Alternative approaches were tested for robustness and will be presented.

Results
Following diagnostic testing and appropriate adjustments, results show scoring indeed impacted 5050 sales. Given space restrictions, we focus on findings concerning the scoring variables. A regression model based on OLS unstandardized coefficient estimates showed no evidence of an association between GF and APT, but found a positive association between GA and APT (b=.22, SE=.08; t567=2.72, p<.01). Exploring further, the type of interval is found to interact with GA to impact APT (interaction: t565=-2.01, p<.05). Specifically, during gameplay, GA predicts APT (b=.33, SE=.10; t427=3.13, p<.01); however, during intermissions, there is no significant impact.

Discussion & Implications
With total scoring functioning as a proxy of excitement, GF as a positive, and GA as a negative for the home fan base, this research shows it is not excitement generally or BIRGing but reaction to opponent scoring that precipitates larger wagers. That this effect exists during gameplay, but not intermission, may suggest respite from the state of heightened negative tension helps to offset the proclivity to take on greater risks. Additional implications for managers and policy suggestions derivative of risk-taking and sporting events will be presented.