Introduction

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Sports betting has become increasingly popular in recent years, with a greater diversity of betting products now on offer. The growth of sports betting is facilitated by the increased availability of online betting opportunities. It seems reasonable to conclude that sports betting and spectator viewing are complementary goods. Sports fans can now watch sporting contests on television in the comfort of their own home and simultaneously place bets on the outcome through online bookmakers. At many UK football stadia, bookmakers have facilities within the premises for fans to place bets. Many European football teams now have shirt sponsorship provided by betting companies. The growth of sports betting gives rise to several important issues for scholars to analyse and the present volume exhibits state of the art research on a variety of key questions including how betting markets function. Specifically, can bettors usefully exploit imperfections in betting markets so as to generate profits for themselves?

The first five chapters in this book concern strategic issues in sports betting including recent trends and current policy concerns. The question of the extent of complementarity between sports betting and spending on spectator sports viewing is addressed in Chapter 1 by Brad Humphreys, Jane Ruseski and Jie Yang using Canadian household spending data. They find that spending on betting and spending on spectator sports are indeed complementary. Intriguingly, they also find that betting and spending on sports participation are substitutes. This suggests that further deregulation of sports gambling in Canada could well lead to less physical activity and more sedentary life styles for Canadians.

In North America and Europe, many sports betting operations are state-owned and could be argued to suffer from inefficiency and failure to innovate. Privatization of state betting operations could raise efficiency and lead to more product innovation. In Chapter 2 Kent Grote and Victor Matheson use the case of the Illinois State Lottery to analyse whether privatization could lead to increased lottery revenues and hence greater

transfers to public projects. The privatization case they consider did not yield extra revenues and the authors examine why this might be so.

Chapter 3 by Xiaogang Che, Arne Feddersen and Brad Humphreys shows how bookmaker commissions, termed ‘over-round’, have fallen over time through greater competition, hence offering improved value for bettors. They take the English Premier League as their test case and focus on the two largest UK bookmakers. The findings are most interesting. First, over-rounds have fallen over time. Second, this reduction is attributable to the emergence of a betting exchange, Betfair, which has become increasingly popular in the UK. Third, perhaps surprisingly, the reduced commissions are not related to the growth of online bookmakers in the UK. Thus, it is increased competition from the betting exchange and not from online bookmakers that has exerted downward pressure on bookmaker over-rounds.

A recent popular development in sports betting markets is the emergence of in-play betting where gamblers can post bets online during a sporting contest. Betting products available for ‘live’ or in-play betting include the match result, the exact score and the identity of the next scorer. This market has shown spectacular growth for European football. In a novel contribution in Chapter 4, Stephen Dobson and John Goddard investigate the efficiency of the in-play football betting market as applied to exact scores in the English Premier League over two seasons. They compare betting exchange implied probabilities with probabilities generated from a statistical model and find some discrepancies after key events, especially just after a goal is scored or a player is dismissed from the field of play.

Chapter 5 by Jaume García, Levi Pérez and Plácido Rodríguez poses the fundamental question of whether bookmaker probabilities offer superior predictions of match outcomes to bettors themselves. Their test case is Spanish football and the comparison gamblers are football pools bettors who play a game where they forecast match outcomes. The authors find, first, that there is a favourite–longshot bias in Spanish fixed-odds football results betting and, second, bookmakers’ predictions outperform those of football pools bettors.

The next four chapters question the existence of betting market efficiency and focus on possible market anomalies, biases or failures. The key question uniting most of these chapters is whether sports betting markets are efficient so that outcome probabilities associated with betting odds are exactly correlated with match outcomes with any deviation being due to ‘luck’. The last chapter analyses manipulation of individual sporting contests.

In North America and Europe, the dominant mode of horse race betting is *pari-mutuel* where the operator takes a fixed commission and winners share a pool of betting money. In the United Kingdom, this betting

format is known as the ‘Tote’. But unlike Europe and North America, United Kingdom bettors can choose to bet on the pari-mutuel form or at fixed-odds offered by on-course and off-course bookmakers. This raises the question, addressed in Chapter 6 by Babatunde Buraimo, David Peel and Robert Simmons, of whether returns for winning bets are similar across both types of market. The authors investigate UK horse racing and find that returns for winning bets are superior in the pari-mutuel market, compared to fixed-odds bets, for long shots but not at short odds. The authors rationalize this finding in terms of how odds are set by bookmakers together with gamblers’ attitudes to risk, bearing in mind that the pari-mutuel sector is a more risky proposition for a gambler given that odds are unknown *ex ante*.

Considerable attention has been devoted to the presence of favourite–longshot bias in sports betting markets where favourites are ‘under-bet’ with odds that are superior to those predicted under fully efficient markets. Underdogs are ‘under-bet’ with odds that are even more unfair than those that would be predicted under market efficiency. The favourite–longshot bias has been well-documented in horse racing. In Chapter 7, Arne Feddersen extends the analysis of favourite–longshot bias to European handball leagues covering six countries. The chapter uses regression-based analysis to demonstrate the presence of favourite–longshot bias in handball with market inefficiency observed as a consequence.

A significant strand of literature on sports betting investigates how bettors and betting markets respond to winning streaks by players or teams. This literature began with basketball and refers to the ‘hot hand’ effect of in-form players and teams which suggests that bettors and/or bookmakers believe this streak will continue. Do gamblers benefit from backing a player or team that is on a winning streak or would they gain superior returns by assuming that the streak will end in the next game? Chapter 8 by Rodney Paul and Andrew Weinbach tests the ‘hot hand’ hypothesis in betting on Major League Baseball games. Interestingly, they find different results for bets based on the momentum of the team and on individual pitchers. Their results show that the baseball betting market believes in the ‘hot hand’ and there is potential for positive returns for gamblers when betting that a team’s hitting streak will end i.e. bettors would benefit from pursuing a ‘contrarian’ strategy. In contrast, wagering on pitchers with successful streaks delivers superior returns to bets against the streak.

In Chapter 9, Robert Simmons and Rhys Wheeler test the ‘hot hand’ hypothesis in European football and analyze returns to simple betting rules relating to team momentum effects. They detect some evidence that the market believes in the notion of winning streaks but such beliefs are fully

incorporated into bookmaker fixed-odds. In European football, it appears there is no scope for gamblers to exploit team winning streaks so as to generate profits for themselves.

In Chapter 10, David Forrest takes a broad look at malfeasance in betting markets through match-fixing. He confronts the critical issue of how and why match-fixing might occur in some sporting competitions. This chapter sets out economic motives for players to engage in match-fixing and also establishes the structural features of betting markets that lead to fixes. The solution, however, is not to make betting markets illegal as this would be counter-productive and would harm consumer welfare. Instead, Forrest argues for the need for sports governing bodies and national and supranational governments to cooperate in detecting and punishing match-fixing.

We hope that this book demonstrates the richness and depth of contemporary research into sports betting markets. We believe that opportunities for fruitful research into sports betting markets will continue to open up as these markets grow and develop.

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