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Betting on long shots in NCAA basketball games and implications for skew loving behavior

L. Lee Colquitt,[a] Norman H. Godwin,[b] and Steve Swidler [a,*]

[a] *Department of Finance, Auburn University, Auburn, AL 36849, USA*
[b] *School of Accountancy, Auburn University, Auburn, AL 36849, USA*

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Abstract

This paper examines wagers on NCAA basketball games, a bookmaking market. Here the market equilibrating mechanism is the point spread rather than the return on the wager, and skewness is necessarily 0. Thus, any evidence of a long shot bias is inconsistent with the skew loving behavior posited in the research on pari-mutuel markets. In our analysis of nearly 16,000 bets, the long shot fails to cover the point spread more than 50% of the time. This long shot bias is inconsistent with market efficiency and cannot be explained by skew loving behavior.

Keywords: Efficient markets; Gambling; Behavioral finance; Risk preferences

1. Introduction

A number of horse racing studies have documented that gamblers tend to bet more on long shots than efficient markets would predict. The result is that the expected return per dollar bet on a horse increases with the probability of the horse winning. While the long shot bias has been mainly observed in the pari-mutuel betting arena, there has been little examination of betting on long shots when the payout is fixed. This study looks at NCAA[1] basketball games where payouts are fixed at one dollar for each dollar wagered (abstracting from transaction costs) and betting action determines the point spreads. If the long shot bias

* Corresponding author.
E-mail address: swidler@auburn.edu (S. Swidler).
[1] National Collegiate Athletic Association.

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exists, then excessive betting on the underdog will cause point spreads to be smaller than the mean of the games' outcomes.

Empirical studies of horse races typically find that for low probability, high variance bets (i.e., long shots), the subjective odds set in the pari-mutuel market are lower than the objective odds calculated from the actual finishes. A number of researchers suggest that the long shot bias is the result of risk-loving behavior (see Weitzman, 1965; Ali, 1977; Quandt, 1986, and Kanto et al., 1992). Prospect theory is another possible explanation for the long shot bias. In prospect theory, Kahneman and Tversky (1979) posit that people place too large a weight on small probabilities when estimating expected utility. Golec and Tamarkin (1998) provide yet another explanation for the long shot bias. They show that the data are consistent with risk aversion if one considers skewness of betting returns.[2]

Analysis in the Golec and Tamarkin paper rests on the assumption that variance and skewness increase as a horse's objective win probability decreases. Thus, when wagering on long shots, the utility from positive skewness outweighs the disutility from negative expected return and high variance. This explanation rests on the fact that in pari-mutuel markets, the return distribution for wagering on long shots is highly asymmetrical.

If, however, point spreads serve as the price setting mechanism and the wager is perceived to be a fair game (abstracting from transaction costs), skewness is necessarily zero. In these markets, evidence of a long shot bias would not be the result of skew loving behavior. Thus, examining NCAA basketball game wagers provides a twofold test of previous gambling hypotheses concerning the long shot bias found in pari-mutuel markets. First, we investigate the betting line's forecast of the actual point spread, and second, we consider the number of times the long shot beats the betting line. Any evidence of a long shot bias in the NCAA basketball bookmaking market cannot be explained by the skew loving behavior posited by Golec and Tamarkin.

Sports book wagering has the additional feature that it is a competitive market, an important quality when trying to examine issues of efficiency. According to the National Gambling Impact Study Commission Report (James, 1999), there are 142 legal sports books in Nevada that allow wagering on amateur sports. This is in addition to the 53 sports books that existed on the World Wide Web in 1998. While the exact dollar amount bet on NCAA basketball is difficult to measure, the Study's estimate for total sports book wagering in 1998 includes $2.3 billion in Nevada, $651 million on the Internet, and an additional $80 to $380 billion of illegal sports betting.

2. Methodology and data

Placing a bet with a bookmaker guarantees a rate of return based on a particular outcome. When wagering on NCAA basketball games, the typical quoted price is a 10:11 bet. In other words, for each $11 wagered, $10 is returned on a winning bet. This "11 gets you 10" rule means that for the bettor to breakeven, he or she must win 52.4% of the time.

[2] Potters and Wit (1996) suggest still one other long shot bias explanation. They hypothesize that bettors have myopic beliefs and heavily discount the favorable information in racing odds for popular horses.