Market Efficiency and Recreational Betting

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Abstract

The expanding legalization of sports betting will most assuredly swell the ranks of bettors nationwide and invariably attract some who would gamble less for financial gain than for entertainment value. While random betting can quickly end the fun for these "recreational bettors", we propose a strategy that relies on the efficiency of the market for bets on college football to minimize the risk and sustain the action.

Background

Academic writers have long lamented the efficiency of the football betting market. Strategies as imaginative as betting on college home teams in arid regions (e.g., Kuester and Sanders, 2011) or as uncomplicated as wagering on underdogs in the National Football League (e.g., Kochman and Goodwin, 2004) produce few anomalies. But what is frustrating to researchers is a boon to bettors who are more interested in action than windfall. An efficient market promises that while regular profits are elusive, regular losses are equally rare. That guarantee of sorts, however, comes with three conditions. One, betting must be confined to a rule that is applied consistently and unfailingly. Two, the rule should have some historical support or rationale for doing no worse than breaking even. Three, the rule cannot be subject to any bettor bias.

Betting to break even was first explored by Kochman and Gilliam (2010). They showed that wagers on the 1483 visiting NFL underdogs during the 2000-2008 seasons cost recreational bettors only $395—or less than $0.27 per bet—when risking $11 to win $10. Their 51.1-percent wins-to-bets ratio was slightly less than the implied breakeven rate of 52.4 percent. Kochman, Gilliam and Goodwin (2013) reported that bets on NFL teams to reverse their prior game's outcome against the point spread over the 2001-2010 seasons also failed to be statistically significant but did generate a profit of $259 on modest wagers of $11-to-$10 as well as the entertainment derived from 2779 bets.

Methodology

The purpose of this paper is to search for more proof that recreational betting merits a place in the efficient markets literature. To start, we wondered if the poor performance by college football teams against the spread (ATS) in one year had any predictive value for the next. It may be that such schools will become out-of-favor and underbet by bettors—conditions found favorable for positive returns by Kochman and Gilliam (2012). Additionally, internal adjustments (e.g., a coaching change)

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could lead to greater success. Our curiosity led to the records of college football teams ATS for the 2002-2011 seasons. Our data source was Steele (2013). "Poor performance" was equated with failing to beat the spread in nine or more of the 12 games which colleges normally schedule per year. To doubt that our recreational bettors would do the research necessary to identify such schools is to doubt that mining data for trends and overlooked statistics is part of the entertainment experience.

Schools winning three or fewer games against the spread in one season were bet to beat the spread in the next. Conceding regular profits, we screened the wins-to-bets ratios for nonrandomness per Equation (1). Cumulative dollar outcomes were also recorded as well as profit or loss per bet. Wagers were limited to $11 (to win $10) in keeping with our recreational theme.

$$(1) \qquad Z_R = \frac{(W/B - 0.50)}{\{[0.50)(1 - 0.50)]/B\}^{1/2}}$$

where: Z_R = statistic for testing the null hypothesis of randomness
W = number of winning bets
B = total number of bets

Results

Wins-to-bets ratios in Table 1 suggest that past and future performances against the point spread can be negatively related. Former one-game winners outperformed former two- and three-game winners by margins of 5.4 percent and 7.3 percent, respectively, while former two-game winners beat former three-game winners by 1.9 percent. Spread over the nine seasons in which wagers were possible, our 1157 total bets averaged roughly 130 per year—or 10 per week.

Table 1
Wagers of $11 to win $10 on college football teams to beat the spread
in seasons following those with 0-3 wins ATS (2002-2011)

Prior season's wins	***Following season's bets***	***Winning bets***	***Wins to bets***	***Dollar return***	***Dollar return per bet***
Three	789	395	50.1%	- 384	- 0.49
Two	300	156	52.0%	+ 24	+0.08
One	68	39	57.4%	+ 71	+1.04
Zero	0				
Totals	***1157***	***590***	***51.0%***	***-337***	***-0.29***

Not surprisingly, none of our wins-to-bets ratios was significantly nonrandom after adjusting for transaction costs. Nonetheless, former one- and two-game winners managed cumulative returns of $71 and $24, respectively. Cumulative losses of $384 for former three-game winners reduced to less than 50 cents per wager. Overall, our 1157 wagers incurred a net loss of $337—or 29 cents per bet.

Conclusions

If you can't beat 'em, join 'em. That's the cry of recreational bettors who accept the reality of an efficient market for bets on football games and, to a limited extent, exploit it. Profits come in the form of weekly entertainment. And when football betting replaces more costly hobbies, financial gains can be reaped.

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