Gambling Strategies and Prize-Pricing Recommendation in Sports Multi-Bets

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Supplementary Material

Here we describe three statistical tests over the three betting houses: WINNER, William Hill, and Bet365. We hypothesize that the distributions of William Hill and Bet365 are similar while WINNER distribution differs from the other two betting houses. We did not reject the null hypothesis of the similarity of Bet 365 and William Hill, while we found WINNER differ, see Figure S1.
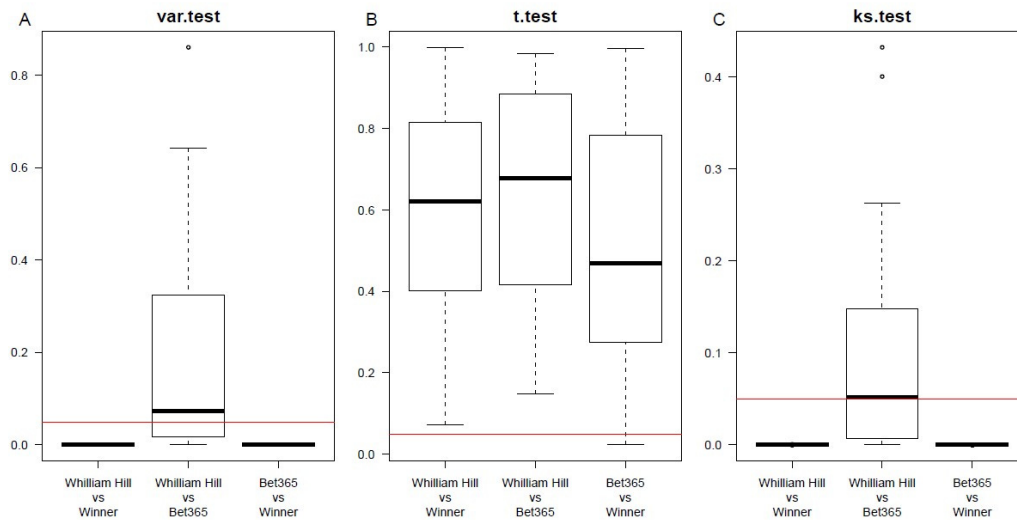

Figure S1: Statistical comparison between probability distributions of the bets offered by three betting houses. Three statistical tests were applied: F-test (A), t test (B), and Kolmogorov Smirnov test (C). Since the number of observations was different among the three betting houses in the data that we have, we down sampled the number of observations from these three betting houses to the lowest number (1000 in WINNER). After randomly down sampling the observations 30 times we applied the three statistical tests mentioned above. The t test is designed to compare the means between two samples, and the F-test and Kolmogorov Smirnov are designed to compare the whole distribution. The Y axis represents the p values of the various tests and the three categories in the X axis correspond to the three pairwise comparisons.