

Determination of Odds in Prediction Markets: Coexistence of Posted-offer and Double-auction Designs

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Non-technical Summary (GDN Grant number RRC IX-05)

The 1961 Interstate Wire Act, commonly known as the 1961 Wire Act, has made it clear that bettors in the United States cannot use credit cards or money transfer companies to transmit funds to their accounts with online sports betting websites. This paper is partly motivated by what is a direct consequence of this law, that without online sportsbooks in the markets, the only access bettors have in the U.S. are traditional bookies. As a result, bettors miss out on access to another type of betting mechanism, called double auction, that is deep, liquid and is shown to offer better odds. We not only show that both types of mechanisms could coexist in the same market (if legal issues were not an obstacle), but also that bettors who have access to both are in average better off than those whose only avenue for betting is through bookies.

This paper offers a theoretical model of coexistence of two competing mechanisms in the same market; one follows the posted-offer rule and the other one incorporates a double-auction mechanism. We motivate the study of this coexistence with a sports betting example; bettors are free to choose which mechanism they want to place their bets in. The model implies that i) bettors' risk aversion parameter is instrumental in whether these two mechanisms coexist or not, ii) most bettors are strictly better off, and none is worse off, when they have access to both of these competing mechanisms rather than just one, and iii) these results hold even when we allow the posted-offer market maker (bookie) to make a positive profit instead of following a zero expected profit pricing rule.

In the case of the U.S., we conclude by hypothesizing that removing the legal obstacles to online sports betting would allow betting exchanges to enter this market, making bettors better off. We propose that countries such as the U.S., France, Turkey, and the Netherlands should consider changing their laws such that bettors in those countries can have easy access to betting exchanges as well.