Republicans nominating Steve Forbes, whose "flat tax" would have eliminated the tax exemption for municipal bond interest.

Moving beyond ex-post studies of elections, Wolfers and Zitzewitz (2005b) report on an ex-ante analysis of the co-movement of oil and equity prices with a contract tracking the probability of a U.S. attack on Iraq in 2002-3 (Figure 5). The results suggest that a substantial war premium was built into oil prices (and a discount built into equities).

<Figure 5 here>

The contracts we have described thus far have depended on only one outcome. The same principles can be applied to contracts tied to the outcomes of more than one event. These contingent contracts potentially provide insight into the correlation between events. For instance, Wolfers and Zitzewitz (2004b) ran experimental markets on the online betting exchange Tradesports.com in the run-up to the 2004 presidential election. In one example, they ran markets linked to whether George W. Bush would be re-elected, whether Osama bin Laden would be captured prior to the election, and whether *both* events would occur. These markets suggested a 91 percent chance of Bush being re-elected *if* Osama had been found, but a 67 percent unconditional probability. Berg and Reitz (2003) report on contracts whose payoff was linked to 1996 Democratic vote shares conditional on different potential Republican nominees; on the basis of these prices they argue that alternative nominees, such as Colin Powell, would have outperformed Bob Dole.

The potential to apply these markets to determine the consequences of a range of contingencies has led Hanson (1999) to term these "Decision Markets". Indeed, Hanson (2000) has suggested that such markets could be used to remove technocratic policy implementation issues from the bureaucracy, a suggestion endorsed in Hahn and Tetlock (2006). Moreover, while the previous example involves only one contingency, Hanson (2003) suggests that market scoring rules can allow traders to simultaneously predict many combinations of outcomes. The basic intuition of his proposal is that rather than

betting on each contingency, traders bet that the sum of their errors over all predictions will be lower.

However while contingent markets can be used to estimate the joint probability of choice A and outcome B, care must be taken before inferring that choice A should be made because it will maximize the probability of outcome B. That is, while these markets can highlight the correlation between events, the difficulty of inferring causation remains.

Conclusion

The healthy bibliography below attests to the fact that interest in prediction markets has boomed in recent years. Many questions remain. Theoretical research holds the promise of better understanding the institutional design features that yield optimal information aggregation and efficient pricing. The practical agenda includes developing new ideas about how and when prediction markets can aid decision-making by business and government.

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