

Chapter 11

1. Friedrich Hayek, "The Use of Knowledge in Society," *American Economic Review* 35 (1945): 519–530, reprinted in *The Essence of Hayek*, ed. Chiaki Nishiyama and Kurt R. Leube (Stanford, CA: Hoover Institution, 1984), 211–224. A superb treatment of Hayek's thought is Bruce Caldwell, *Hayek's Challenge: An Intellectual Biography of F. A. Hayek* (Chicago: University of Chicago Press, 2004).
2. Nishiyama and Leube, *The Essence of Hayek*, 212.
3. *Ibid.*, 214.
4. *Ibid.*, 219–220.
5. *Ibid.*, 220.
6. Robert J. Shiller, *Irrational Exuberance*, 2nd ed. (New York: Broadway Books, 2005).
7. *Ibid.*, 11.
8. Bo Cowgill, "Putting Crowd Wisdom to Work," *Google Official Blog*, September 21, 2005, <http://googleblog.blogspot.com/2005/09/putting-crowd-wisdom-to-work.html>.
9. Justin Wolfers and Eric Zitzewitz, "Prediction Markets," *Journal of Economic Perspectives* 18 (2004): 107–126.
10. Saul Levmore, "Simply Efficient Markets and the Role of Regulation: Lessons from the Iowa Electronic Markets and the Hollywood Stock Exchange," *Journal of Corporation Law* 28 (2003): 593.
11. Emile Servan-Schreiber et al., "Prediction Markets: Does Money Matter?" *Electronic Markets* 14 (2004): 243–251.
12. Richard Roll, "Orange Juice and Weather," *American Economic Review* 74 (1984): 871.
13. See Wolfers and Zitzewitz, "Prediction Markets," 113–114.
14. Donald N. Thompson, *Oracles: How Prediction Markets Turn Employees into Visionaries* (Boston: Harvard Business Review Press, 2012), 105.
15. *Ibid.*, 103.
16. *Ibid.*, 105.
17. Kay-Yut Chen and Charles R. Plott, "Information Aggregation Mechanisms: Concept, Design, and Implementation for a Sales Forecasting Problem," working paper, Social Science, Division of the Humanities and Social Sciences, California Institute of Technology, March 2002, 3, <http://authors.library.caltech.edu/44358/1/wp1131.pdf>. (describing variation of this model employed by Hewlett-Packard).
18. Wolfers & Zitzewitz, "Prediction Markets," 112; Robert W. Hahn & Paul C. Tetlock, "Harnessing the Power of Information: A New Approach to Economic Development," working paper, AEI-Brookings Joint Center for Regulatory Studies, 2004, 4, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=641444.
19. Wolfers and Zitzewitz, "Prediction Markets," 112.
20. Thompson, *Oracles*, 50.
21. For the IEM results, see "They All Got it Right: Polls, Markets, and Models," *PBS NewsHour*, November 7, 2012, www.pbs.org/newshour/businessdesk/2012/11/they-all-got-it-right-polls-ma.html. For the final tally, see "2012 Presidential Election Results," *Washington Post*, November 19, 2012, www.washingtonpost.com/wp-srv/special/politics/election-map-2012/president/.
22. Joyce Berg et al., "Results from a Dozen Years of Election Futures Market Research," unpublished manuscript, March 2003, http://tippie.uiowa.edu/iem/research/papers/bergforsythenelsonrietz_2008.pdf; Joyce E. Berg and Thomas A. Rietz, "Prediction Markets as Decision Support Systems," *Information Systems Frontiers* 5 (2003): 79–93.
23. Donald Granberg and Edward Brent, "When Prophecy Bends: The Preference-Expectation Link in U.S. Presidential Elections, 1952–1980," *Journal of Personality and Social Psychology* 45 (1983): 479.
24. Koleman S. Strumpf, *Manipulating the Iowa Political Stock Market*, unpublished manuscript, 2004, cited in Wolfers and Zitzewitz, "Prediction Markets," 118.
25. Robert Forsythe, Thomas A. Rietz, and Thomas W. Ross, "Wishes, Expectations and Actions: A Survey on Price Formation in Election Stock Markets," *Journal of Economic Behavior and Organization* 39 (1999): 94.
26. *Ibid.*, 94–95.
27. Charles G. Lord, Lee Ross, and Mark R. Lepper, "Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence," *Journal of Personality and Social Psychology* 37 (1979): 2098–2109. See also Muzafer Sherif and Carl I. Hovland, *Social Judgment: Assimilation and Contrast Effects in Communication and Attitude Change* (New

Haven, CT: Yale University Press, 1961), 188 (discussing how individuals filter information to conform to their preexisting positions).

28. Forsythe, Rietz, and Ross, "Wishes," 94.

29. Berg et al., *Election Futures Market Research*, 42.

30. Forsythe, Rietz, and Ross, "Wishes," 99–100. The term "quasi-rational" comes from Richard H. Thaler, *Quasi-Rational Economics* (New York: Russell Sage Foundation, 1991), xxi.

31. Richard H. Thaler and William T. Ziemba, "Anomalies: Parimutuel Betting Markets: Racetracks and Lotteries," *Journal of Economic Perspectives* 2 (1988): 163, explores favorite-longshot bias. See also Charles F. Manski, "Interpreting the Predictions of Prediction Markets," unpublished manuscript, August 2005, www.aeaweb.org/assa/2006/0106_1015_0703.pdf, which summarizes horse-race data findings.

32. David Forrest and Ian McHale, "Longshot Bias: Insights from the Betting Market on Men's Tennis," in *Information Efficiency in Financial and Betting Markets*, ed. Leighton Vaughan Williams (Cambridge: Cambridge University Press, 2005), 215–230.

33. Interestingly, some sports betting shows the opposite pattern; in English professional football, long shots have been found to be underpriced. See David Forrest and Robert Simmons, "Efficiency of the Odds on English Professional Football Matches," in *Information Efficiency*, ed. Williams, 336.

34. The most important evidence can be found on Tradesports's predictions, where highly unlikely outcomes were overpriced in a number of domains. See Wolfers and Zitzewitz, "Prediction Markets," 117.

35. See Richard H. Thaler, ed., *Advances in Behavioral Finance*, vol. 2 (Princeton, NJ: Princeton University Press, 2009); and see Kay-Yut Chen, Leslie R. Fine, and Bernardo A. Huberman, "Eliminating Public Knowledge Biases in Information-Aggregation Markets," *Management Science* 50 (2004): 983–994, for one example of a method of correcting prediction market outputs for risk-attitudes and shared-information biases, increasing accuracy over the raw market prices.

36. Shiller, *Irrational Exuberance*, 2.

37. For much evidence, see Thaler, *Advances in Behavioral Finance*.

38. Erin Jordan, "Iowa Electronic Markets Yields Near-Accurate Result," *Des Moines Register*, November 10, 2004.