7-1-2009

Luck or Skill? An Examination of the Ehrlich - Simon Bet

Katherine A. Kiel
College of the Holy Cross, KKIEL@HOLYCROSS.EDU

Victor Matheson
College of the Holy Cross, vmatheso@holycross.edu

Kevin Golembiewski
College of the Holy Cross

Luck or Skill? An Examination of the Ehrlich - Simon Bet

Katherine A. Kiel, Victor A. Matheson, and Kevin Golembiewski

July 2009

Department of Economics
College of the Holy Cross
Box 45A
Worcester, Massachusetts 01610
(508) 793-3362 (phone)
(508) 793-3708 (fax)
http://www.holycross.edu/departments/economics/website

Luck or Skill? An Examination of the Ehrlich - Simon Bet

By
Katherine A. Kiel[†]   Victor A. Matheson[††]
College of the Holy Cross   College of the Holy Cross

and

Kevin Golembiewski[†††]
College of the Holy Cross

July 2009

Abstract

In 1980, Paul Ehrlich and Julian Simon placed a famous bet on whether the prices of a bundle of natural resources would rise or fall over the ensuing decade. Simon won the bet as the real price of the bundle fell significantly, and the result of this bet has been taken as proof that technological progress is likely overcome any Neo-Malthusian concerns about natural resource scarcity. Contrary to the popular perception, however, an examination of the price history of the identical bundle of goods from 1900-2007 shows that Ehrlich and not Simon would have won a majority of the bets over the past century and would have done so by a wide margin.

[†]Katherine A. Kiel, Department of Economics, Box 17A, College of the Holy Cross, Worcester, MA 01610-2395, 508-793-2743 (phone), 508-793-3708 (fax), kkiel@holycross.edu

[††]Victor A. Matheson, Department of Economics, Box 157A, College of the Holy Cross, Worcester, MA 01610-2395, 508-793-2649 (phone), 508-793-3708 (fax), vmatheso@holycross.edu

[†††]Kevin Golembiewski, Department of Economics, College of the Holy Cross, Worcester, MA 01610-2395

Introduction

Among environmentalists and economists, a debate has long raged regarding the prospects for long-term economic growth. On the one hand, neo-Malthusians predict dire consequences to living standards due to the depletion of both renewable and non-renewable resources in the face of population and economic growth. On the other side of the debate are the technological optimists who believe that scientific progress can alleviate potential shortages of natural resources by developing substitutes, promoting efficient usage, discovering new supplies, and developing methods to extract greater proportions of existing sources.

One prominent episode in this ongoing debate is the famous bet between Paul Ehrlich, the doomsday biologist best known for his 1968 work, *The Population Bomb*, and the economist Julian Simon, a prominent environmental skeptic. Acknowledging that market prices, in part, reflect scarcity, in 1980 the two men placed a bet on whether the real price of a basket of five natural resources would increase or decrease in price over the next decade. Aided by John Harte and John Holdren, Ehrlich chose chrome, copper, nickel, tin, and tungsten for the basket, and the wager was on. By 1990, the nominal price of all five metals had declined with real prices of the resources declining even further (Tierney, 1990). Although challenged to do so, the two men could not come to an agreement about the terms of a rematch.

The results of this bet have received widespread recognition both in scholarly work and in the popular press. The incident is a commonly told anecdote appearing in most environmental economics textbooks (e.g. Tietenberg, 2009; Chapman, 2000; Hartwick and Olewiler, 1999) in the discussion of the scarcity of natural resources. The tale is also frequently related in opinion articles and blogs (e.g. Will, 2009; Kellard, 1998), particularly those critical of environmental

regulations. Indeed, among certain segments of the political spectrum, "the bet" appears to be taken as concrete proof that scarcity of natural resources is not an important issue facing the world economy.

Of course, long-run scarcity is only one of the factors influencing commodity prices at any point in time. Prices can be influenced by exogenous changes in demand, the business cycle, political upheaval in critical resource producing regions, expectations related to growth or inflation, the presence of effective cartels, speculation on the part of investors, or a host of other reasons not directly related to the notion of scarcity at the heart of the original bet. Because the influence of these other factors may obscure the effect of changes in scarcity on prices, a bet on a limited number of resources over a single time period may not be an accurate reflection of true resource scarcity. Simon may have been right or merely lucky.

McClintick and Emmett (2005) briefly examine the issue at the heart of this paper and find that the "price history of the twentieth century provides evidence that [Simon] would have won five of the ten decades by large margins, and he would have won a bet over the entire century." Similarly, Perry (2008) examines what would have happened if Ehrlich and Simon had repeated the bet for the following ten years from 1990-2000 and concludes that Simon would have won yet again. This paper extends their work by examining every 10-year period available in the data and comes to a distinctly different conclusion that is at odds with both the limited existing literature as well as the conventional wisdom on the topic.

Data and Results

U.S. Geological Survey provides price data on all five of the metals that were the subject

of the original bet over the time period from 2007 back to 1900. Nominal metal prices are converted to real prices using the Consumer Price Index (CPI). As the CPI only covers the period back to 1913, the first 13 years of data are converted to real prices using estimates provided by McClusker (2001).

Beginning with the 1900 data, for every year, as with the original bet, it is assumed that an equal dollar amount of each of the five metals is purchased, and the real price of the basket of commodities is then tracked over both 10-year and 25-year intervals. In total, 98 10-year and 83 25-year intervals exist in the data. Table 1 shows the percentage of the intervals during the past 108 years over which Ehrlich would have won the bet as well as the average return Ehrlich would have made on the bet. Contrary to the popular perception, the price history of the past 108 years shows that Ehrlich and not Simon would have won a majority of the bets and would have done so by a wide margin.

Based on the entire sum of available data, the story that the Ehrlich-Simon bet really tells is not that natural resource scarcity does not exist but rather that in any gamble it is always better to be lucky than good. Simon happened to place the bet during one of the 38.2% of years since 1900 during which he would have won, and indeed the 1980 through 1990 time period resulted in one of the 15 worst 10-year returns in the data.

All in all, the data presented in this paper suggest that it is wholly inappropriate to use the results of the famous bet as justification for opposing environmental regulations and conservation measures unless one is content to simply leave the future in the hands of fate.

Table 1: Results of the Ehrlich-Simon Bet - 1900-2007

	10-year intervals	25-year intervals
Number of intervals in data	98	83
Percentage of bets won by Ehrlich	61.2%	59.0%
Average return on bet for Ehrlich	10.5%	13.8%

REFERENCES

Chapman, Duane. 2000, "Environmental Economics: Theory, Application, and Policy."

(Reading, MA: Addison-Wesley).

Hartwick, John M. And Nancy D. Olewiler. 1998, "The Economics of Natural Resource Use."

(Reading, MA: Addison-Wesley).

Kellard, Joseph. (1998), "Reason vs. Faith: Julian Simon vs. Paul Ehrlich." Capitalism

Magazine, April 26, 1998. http://www.capmag.com/article.asp?ID=44

McClintick, D. And Ross B. Emmett. 2005, "The Simon-Ehrlich Debate." PERC Reports 23

(2005) (3): 16-17.

McCusker, John J. (2001), "How Much Is That In Real Money? Revised edition."

Worcester,MA: American Antiquarian Society.

Perry, Mark J. (2008), "Would Julian Simon Have Won a Second Bet?" Carpe Diem blog,

http://mjperry.blogspot.com/2008/02/would-julian-simon-have-won-second-bet.html,

published February 13, 2008, accessed June 4, 2009.

Tietenberg, Tom and Lynne Lewis, 2009, "Environmental and Natural Resource Economics,

8th edition." (New York: Addison Wesley).

Tierney, John, "Betting the Planet." *New York Times Magazine* (December 2, 1990): 52-53, 74,

76, 78, 80-81.

Will, George, 2009, "Dark Green Doomsayers." *Washington Post*, February 15, 2009; Page B07.