



## News and Views

## Luck or skill? An examination of the Ehrlich–Simon bet

Katherine Kiel\*, Victor Matheson, Kevin Golembiewski

College of the Holy Cross Department of Economics One College Street Worcester, MA, 01610 United States

## ARTICLE INFO

## Article history:

Received 18 February 2010  
 Received in revised form 3 March 2010  
 Accepted 4 March 2010  
 Available online 11 April 2010

## Keywords:

Natural resources  
 Scarcity  
 Neo-Malthusian

## JEL Classification Codes:

Q30  
 Q31

## 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 to overcome that of 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 to 2008 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.

© 2010 Elsevier B.V. All rights reserved.

## 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 and Lewis, 2009; Chapman, 2000; Hartwick and Olewiler, 1998) 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 10 years from 1990 to 2000 and concludes that Simon would have won yet again. In both of these papers, however, the authors limit their examination to only a fraction of the 10-year periods for which data are available, and they do not include the large run-up in commodity prices that has occurred since 2000. This paper extends their work by examining every 10-year period available in the data and comes to a distinctly different

\* Corresponding author.

E-mail address: [kkiel@holycross.edu](mailto:kkiel@holycross.edu) (K. Kiel).

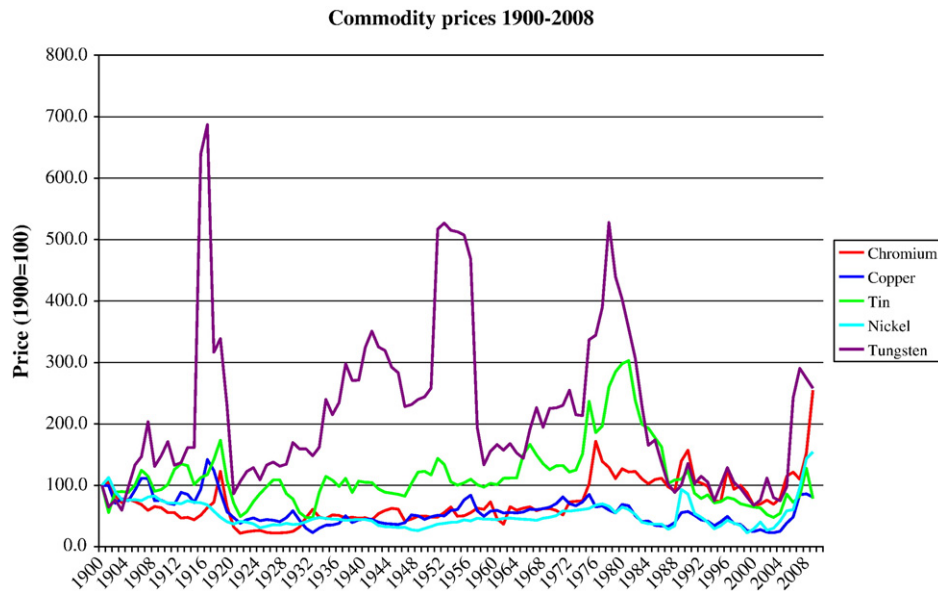


Fig. 1. Commodity prices 1900–2008.

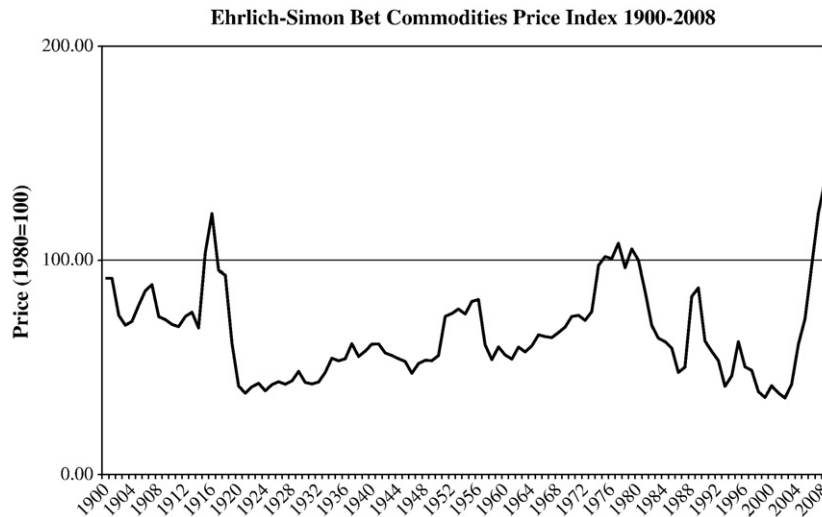


Fig. 2. Price Index for Ehrlich–Simon bet commodities 1900–2008.

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 1900 through 2008. 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. These annual price data for each commodity individually are shown in Fig. 1 using the first year of the data as the base year, and Fig. 2 shows the Price Index for the five metals together using the year of the original bet, 1980, as the base year in terms of both the prices and the quantities in

the consumption basket. In total, 99 10-year and 84 25-year intervals exist in the data. Table 1 shows the percentage of the intervals during the past 109 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 109 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 38.4% of

**Table 1**  
Results of the Ehrlich–Simon bet – 1900–2008.

	10-year intervals	25-year intervals
Number of intervals in data	99	84
Percentage of bets won by Ehrlich	61.6%	59.5%
Average return on bet for Ehrlich	12.8%	15.0%

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. Interestingly, the periods from 1998 to 2008 and 1983 to 2008, the most current data available, result in the highest 10-year and 25-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.

## References

- Chapman, Duane, 2000. *Environmental Economics: Theory, Application, and Policy*. Addison-Wesley, Reading, MA.
- Hartwick, John M., Olewiler, Nancy D., 1998. *The Economics of Natural Resource Use*. Second Edition. Addison-Wesley, Reading, MA.
- Kellard, Joseph., 1998. Reason vs. Faith: Julian Simon vs. Paul Ehrlich. *Capitalism Magazine*. April 26, <http://www.capmag.com/article.asp?ID=44>.
- McClintick, D., Emmett, Ross B., 2005. The Simon–Ehrlich debate. *PERC Reports*, 23 (3), pp. 16–17.
- McCusker, John J., 2001. *How Much is That in Real Money? Revised Edition*. American Antiquarian Society, Worcester, MA.
- 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, accessed June 4, 2009.
- Tietenberg, Tom, Lewis, Lynne, 2009. *Environmental and Natural Resource Economics*. 8th edition. Addison Wesley, New York.
- 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*, p. B07. February 15.