
Readings

Interpreting the Government Habit

Regulation: Economic Theory and History

edited by Jack High
(University of Michigan Press, 1991), 177 pp.

Reviewed by William A. Niskanen

Economists and historians should have something interesting to say to each other. That was the premise of the conference in which the articles in this book were first presented. Despite Frank Knight's observation that interdisciplinary research often leads to the cross sterilization of both disciplines, the articles in this book suggest that some progress has been made. Some economists now use economic theory to interpret the history of regulation. And the contributions of historians have led to a progressive refinement of the now dominant "interest group" theory of regulation.

This book includes six articles on the history of U.S. regulation plus an efficient introduction and summary by the editor. The articles are of uneven quality and interest, but the book will be a valuable reference on several subjects.

The most valuable article is a summary of the post-Stigler developments in the interest group theory of regulation by Robert Tollison, one of the major contributors to that literature. Tollison summarizes the limitations of the initial Stigler hypothesis that regulatory agencies are "captured" by the regulated industry, the substantial refinement of that approach by Sam Peltzman, the extension to heterogeneous firms, and the growing body of empirical studies that test the theory.

For this reviewer, that has been an impressive development but has two major remaining problems. First, the theory does not yet provide an adequate explanation of the substantial reduction

in economic regulation in the past two decades. And second, the theory neglects (dismisses?) any role of ideas in shaping the perspectives of the regulators. Are ideologies only rationalizations of the prevailing interests? Surely, the characteristic perspective of policy intellectuals during the populist era, the progressive era, the New Deal, and the post-Vietnam period shaped the perspectives of regulators and the opportunities for firms to use a change in regulation to serve their interests. Despite these reservations, the Tollison article is a very efficient summary of the interest group theory of regulation. One might hope that Tollison would expand his article into a more comprehensive book.

One interesting theme of several of these articles is the interaction of technology and regulation. The articles by Robert Crandall and Richard Hirsh make the case that changes in technology had an important effect on the partial deregulation, respectively, of the communications industry and of electric utilities. In contrast, the article by Richard Vietor describes how the deregulation of domestic aviation induced a replacement of most of the wide-body aircraft (such as the 747) with smaller aircraft that are more efficient in a hub-and-spoke system. Each of those articles is a valuable summary of the experience under full or partial deregulation of those industries, but the authors resist any monocausal explanation of the politics of deregulation.

The most interesting article, by Clayton Coppin and Jack High, is a story of bureaucratic entrepreneurship and competition in the Bureau of Chemistry in the years 1883 to 1912, a period when that bureau was led by one Harvey Washington Wiley. This reads more like a who-done-it than an economic analysis, but it serves as a useful reminder that bureaus are run by real people with personal objectives rather than by selfless mandarins who act as perfect agents of their political superiors. The remaining article, by Jerome Ellig, explains why organized baseball, but not other professional sports, acquired and has maintained an

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antitrust exemption. Those two articles bear on minor industries but are interesting examples of turning an economist loose to explain some interesting minor episode in the history of regulation.

A final note: About a year ago, I asked Jonathan Hughes, the distinguished economic historian of early American regulation, to review this book. After several phone calls to inquire about the status of his review, I was informed that Jonathan was seriously ill and later died. This book would have been an appropriate memorial to Jonathan Hughes by describing the continuity and change in both the history of American regulation and the analysis of that history.

Massaging the Numbers for Climate Policy

Global Warming: The Economic Stakes

by William R. Cline

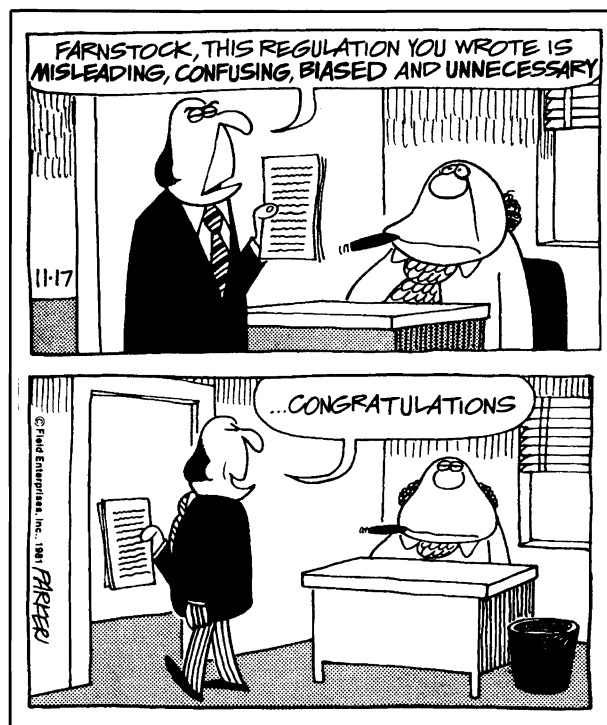
(Institute for International Economics, 1992), 103 pp.

Reviewed by Peter Samuel

William R. Cline, a senior fellow of the Institute for International Economics, argues for an “aggressive international program” to limit carbon dioxide emissions. He agrees that the costs of such a program would be “large” but estimates that the costs of global warming could be larger and that it is prudent to base public policy on a “risk-averse” approach, which he says produces a benefit-cost ratio of 1.3.

Cline recommends a two-phase policy. For the 1990s he proposes a nation-by-nation, best-efforts approach to prevent any increase in carbon dioxide emissions. During that period he argues for the phased introduction of carbon taxes in increments of \$5 per ton per year—rising to about \$40 per ton by the year 2000 to “send a price signal” to the market to move away from fossil fuels. He would place heavy reliance on increasing forests

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as a carbon sink, on eliminating subsidies to fossil-fuel use, on supporting research in nonfossil fuels, and on using science to confirm the global warming thesis and thoroughly investigate various means of combating it.

In the second phase he proposes a major review in the year 2000 to determine whether the enhanced greenhouse effect has been confirmed and how severe the problem is. In what he calls the “felicitous but unlikely event” that the review proves the problem unimportant, the phase one measures would be largely dismantled. If, however, science confirms global warming as a serious problem, as Cline expects, we would intensify intervention by imposing a carbon tax in the range \$100 to \$200 per ton. The government would establish national carbon quotas and would introduce markets in carbon emission permits. The object would be to reduce carbon emissions by 7 percent. Sanctions and other coercive means would be used against noncooperating governments.

Most economists who have studied global warming have concluded that it does not justify any drastic government interventions in the near future. David Montgomery of Charles River Associates surveyed the economic literature and concluded that stabilizing the level of carbon dioxide

would entail costs of around 2 percent of GNP annually, which he said are "far larger than the likely benefits to the United States." The Department of Energy in a major study released in late 1991 concluded the same thing. A National Academy of Sciences report on the implications of global warming concluded that adaptation to higher mean temperatures should not be overly difficult and expensive, given the long period over which warming was predicted to occur. The academy implicitly recommended adaptation over suppression of carbon dioxide. Indur Goklany, an analyst at the Department of the Interior, has proposed a similar approach.

Where Cline Differs

Cline produces his dramatically different conclusions by making a number of highly questionable departures from standard economic analysis and by systematically making pessimistic selections from scientific data. Like many environmentalists, Cline relies heavily on the myth of a scientific consensus about carbon dioxide's enhancing the greenhouse effect to produce major global warming. Without evidence he claims over two-thirds of "informed scientists" consider the greenhouse effect to be highly likely. He also falsely asserts that the empirical record of temperatures provides "substantial support" to the greenhouse theory. According to Greenpeace's 1992 survey of climate scientists, only 13 percent subscribe to the organization's alarmist version of the greenhouse warming. While 32 percent said that theory was possible, 47 percent think it is "probably not" true. Other surveys of the views of scientists have clearly established that it is a minority of scientists with expertise in climate—nothing like two-thirds—who believe the catastrophe theory of an enhanced greenhouse effect.

William Nierenberg, a former director of the Scripps Institution of Oceanography who has directed studies of the greenhouse theory for the George Marshall Institute, notes that "the expected greenhouse signal is missing from the [climate] record" and says that the overpublicized greenhouse computer simulation models have exaggerated it by about a factor of five. He says that the Marshall Institute panel's conclusion that temperatures may rise by one-half degree centigrade—rather than by the climate models' central prediction of two-and-a-half degrees centigrade—with a doubling of carbon dioxide concentrations

is very much center ground in the range of opinion in the scientific community. It is only the environmental zealots among scientists who put full faith in the computer models' predictions despite the lack of empirical support in the temperature record.

Failure to Consider Solar Flicker

In his review of the scientific literature on global warming, Cline makes no mention of the studies attributing temperature trends to changing solar radiation associated with sunspot cycles. He omits completely any reference to the work that Danish researchers Eijil Friis Christensen and Knud Lassen published in *Science* in 1991. That study found what a *Science* editor called a "dazzling correlation" between sunspot activity and global temperatures over the past century. Their research showed a correlation of .95 between the temperature record and solar radiance. By contrast none of the more heavily hyped attempts to demonstrate the theory of an enhanced greenhouse effect has managed to get statistically significant correlations.

Still, even if we assume that there will be a gradual global warming of two and a half degrees centigrade according to the greenhouse dogmas, it is unclear that there is any net cost. Cline prices out a whole series of possible future catastrophes by overlooking any science that flies in the face of his many scenarios of doom. He assumes a forty-inch rise in sea level and U.S. losses of \$7 billion annually from flooding of low-lying land. He does not acknowledge research suggesting that global warming is associated with increased evaporation of ocean waters and increased precipitation. In polar regions those will lead to increased snowfall and greater ice formation. Global warming may therefore probably result in falling sea levels. According to work published in *Nature* in 1992 by Gifford Miller of the Center for Geochronological Research at the University of Colorado, the geological record shows that previous global warmings have produced such drops in sea level. Miller's work estimates that the last time there was a warming comparable to that predicted by the enhanced greenhouse computer models for the next century—120,000 years ago—there was a net increase in polar ice of three trillion cubic meters annually that produced a drop in sea levels of about thirty inches per century. So the oceans could fall, not rise.

Suspect Numbers

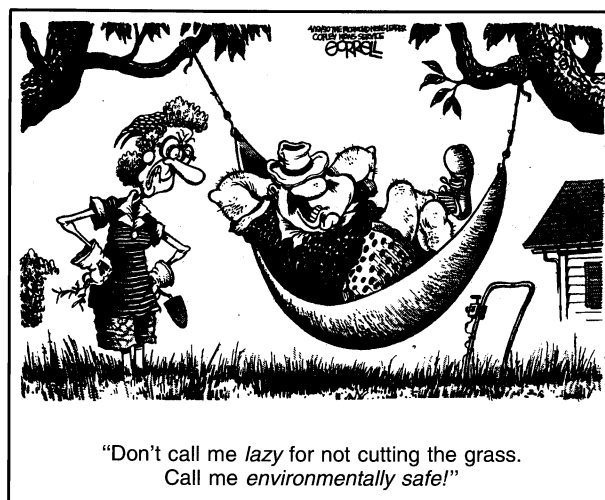
Some of Cline's numbers are extremely suspect. For example, he claims that increased air-conditioning costs of \$11.2 billion annually in the United States will be offset by only \$1.3 billion in reduced heating bills for buildings with a global warming of two-and-a-half degrees centigrade. Given that current mean annual temperatures in the United States are about fifty-three degrees Fahrenheit and that people are most comfortable in a temperature range from sixty-five to seventy degrees Fahrenheit, the warming to a mean of about fifty-seven degrees Fahrenheit would move average outdoor temperatures considerably closer to the human comfort range. With average indoor and outdoor temperatures closer to one another, there should be some overall savings in total heating and cooling because of reduced losses of heat and cold through the shell of buildings. It is quite preposterous for Cline to posit increased cooling costs ten times those of reduced heating costs!

Cline completely ignores the heating of water. Hot water (at say 160 degrees Fahrenheit) currently uses more energy than home air conditioning. Higher general air and ground temperatures will reduce the cost of heating water. Construction costs would decline with global warming since stable foundations and water pipes have to be placed below the frost line. Ice is the biggest destroyer of highways and other outdoor pavement, and warming will therefore lengthen the life of much of the nation's infrastructure. Cline does not allow for any savings at all from reduced ice damage.

Cline asserts that agriculture and water supply will be more costly because warming will increase the incidence of drought. But Robert Balling, director of the Office of Climatology at Arizona State University, says that there is no basis for the hypothesis that increased temperatures will increase drought. Higher temperatures, he says, will result in increased evaporation from the oceans, higher precipitation, and increased stream flow. Balling points out that since the 1960s there has been a trend to reduced drought incidence as temperatures have risen, and that average soil moisture is now higher in the agricultural heartland than when it was colder.

The Value of Warming and Increased Carbon Dioxide for Farming and Forestry

It follows that Cline's numbers for major agricultural and forest losses (\$17 billion per year) are quite implausible. Greater warmth, moisture, and



carbon dioxide all produce higher rates of plant growth and major net gains for agriculture and forestry. They should lower food and plant material costs for consumers. Of course, some particular species of plants would have difficulty with the higher temperature. But Cline seems to be unaware that farmers and foresters routinely adopt new species of plants. Moreover, since the four degree Fahrenheit rise would be spread over many decades, adaptation would only have to be gradual to take full advantage of the favorable climate trend.

Most ridiculous of all is Cline's claim that warming would be unhealthy and would kill an extra 9,800 Americans a year. In truth, increased warmth is healthful as it brings average temperatures closer to the human comfort zone. With the defeat of malaria and yellow fever, subtropical areas are less stressful to the body than the colder areas where most of us live—a fact that gives rise to the migration of old people to Florida and other warmer parts of the country. If New York City's climate changed over the next century to that of Charleston now or if Chicago then got like Memphis now—as would happen under a global-warming scenario—people in the most populous cities would be more comfortable and healthy, not less so.

Use of a Low Discount Rate

Cline's analysis admits that we would incur the costs of trying to combat global warming by suppressing carbon dioxide emissions—by phasing out coal-burning power plants and by reducing the use of gasoline in cars and oil and gas in homes

and industry—long before any of his projected benefits would accrue. Therefore, the discount rate for future benefits and costs becomes critical to the benefit-cost calculation. Capital markets have generally suggested that the appropriate discount rate is 3 to 4 percent per year after allowing for inflation. Yet Cline chooses 2 percent a year.

But even after choosing a low discount rate and after piling up a whole heap of largely bogus costs from presumed global warming, Cline's analysis only produces a benefit-cost ratio of .74! Translated, this means that the present value of future benefits from avoiding global warming comes to only seventy-four cents for each present dollar value of the costs of the policy.

We would be better off adapting to warming than fighting it, Cline's numbers say. But Cline avoids that as his final conclusion by going on to massage his numbers further. He argues that policymakers should be "risk averse" and give a

greater weight to the high-damage scenario than to the most likely case. By such worst-case weighting he manages to come up with a benefit-cost ratio of 1.3. Since 1.0 is the go/no-go point for benefit-cost exercises, he has at last found an economic "justification" for policies to combat carbon dioxide accumulations in the atmosphere to stabilize climate.

Another important aspect of Cline's work is his use of a 300-year time horizon (involving a sixfold increase in carbon dioxide concentrations and a ten to eighteen degree centigrade global warming) in place of the usual 50- to 100-year perspectives (with carbon dioxide doubling and a one-and-one-half to four-and-one-half degree centigrade warming). Most analysts feel they are stretching things to go thirty years out, given the unforeseeable discoveries that can be made and developments that can occur. Cline's model purports to look ahead 300 years! That is not economic analysis. It is speculative fantasy built on science fiction.