



Hayek, Knowledge, and Carbon Taxes: Markets Without Prices or Prices Without Markets?

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As far as I know, Friedrich Hayek never wrote a word about climate change, but two of his most famous works contain arguments that bear directly on this key issue of environmental policy. Judging from what he wrote about the role of science in public policy and the use of knowledge in society, I think that if he had lived on into the twenty-first century, he might have supported a carbon tax.

The role of science in public policy

Hayek's 1945 article, "[The Use of Knowledge in Society](#)," draws a distinction between two kinds of knowledge. One is "knowledge of the particular circumstances of time and place," that is, knowledge that is widely dispersed among individuals, each of whom sees only a small part of the whole picture. The other is scientific knowledge, which, he says, we can reasonably expect to find in the possession of a suitably chosen body of experts.

Most of the article focuses on how best to make use of dispersed knowledge. However, near the beginning, Hayek comments briefly on the role of scientific knowledge:

It may be admitted that, as far as scientific knowledge is concerned, a body of suitably chosen experts may be in the best position to command all the best knowledge available— although this is of course merely shifting the difficulty to the problem of selecting the experts.

Hayek quickly moves on to his main subject, but he returns to the issue of scientific knowledge several years later. In a 1960 essay, "[Why I am Not a Conservative](#)," he explains the differences between the conservative worldview and that of "liberals," a term Hayek uses in the European sense for what Americans would call classical liberals or libertarians. Liberals, he says, are prepared to come to terms with new scientific knowledge, whether they like its immediate effects or not. Conservatives, in contrast, are more wary of science:

Personally, I find that the most objectionable feature of the conservative attitude is its propensity to reject well-substantiated new knowledge because it dislikes some of the consequences which seem to follow from it—or, to put it bluntly, its obscurantism. I will not deny that scientists as much as others are given to fads and fashions and that we have much reason to be cautious in accepting the conclusions that they draw from their latest theories. But the reasons for our reluctance must themselves be rational and must be kept separate from our regret that the new theories upset our cherished beliefs. I can have little patience with those who oppose, for instance, the theory of evolution or what are called “mechanistic” explanations of the phenomena of life because of certain moral consequences which at first seem to follow from these theories, and still less with those who regard it as irrelevant or impious to ask certain questions at all. By refusing to face the facts, the conservative only weakens his own position. Frequently the conclusions which rationalist presumption draws from new scientific insights do not at all follow from them. But only by actively taking part in the elaboration of the consequences of new discoveries do we learn whether or not they fit into our world picture and, if so, how. Should our moral beliefs really prove to be dependent on factual assumptions shown to be incorrect, it would hardly be moral to defend them by refusing to acknowledge facts.

This paragraph gives us Hayek’s answer to his earlier question of how to select a suitable group of experts to represent the state of scientific knowledge—or, perhaps, how *not* to select them: We should *not* base our selection on a dislike of any consequences that seem to follow from well-substantiated new knowledge.

Hayek’s point is not that we should treat what scientists say uncritically. That would hardly be possible, since scientists routinely disagree among themselves. Rather, he is saying two things.

- First, we should judge someone’s scientific credibility without regard to our ideological convictions. Do they have the necessary training? Do they follow methodological norms established by their profession? Are they treated as credible by their own peers, even by those who disagree with their conclusions?
- Second, since there will be differences in findings among credible scientists, we should test our policy recommendations against a full range of views. If our policies make sense only for a limited part of that range, or only for views that lie outside the current scientific consensus, we should say so.

If these norms were observed, we would expect to see conservative, libertarian, and progressive policy analysts working from similar ranges of scientific estimates. Unfortunately, that is often not the case.

For an example relating to climate change, compare [this paper](#) by Joe Romm on *ThinkProgress* with [this one](#) by Robert Murphy, Patrick Michaels, and Paul Knappenberger for the Cato Institute. Both papers emphasize the importance of a parameter known as equilibrium climate sensitivity (ECS), which means the amount by which equilibrium surface temperature in degrees C would increase following a doubling of the level of atmospheric CO₂. Both papers begin from a widely publicized IPCC estimate that ECS is “likely” to be in the range of 1.5o C to 4.5o C.

However, in further discussion of the implications of ECS for public policy, Murphy et al. focus on recent estimates that place the lower bound is as low as a fraction of one degree, maintaining that such estimates “have come to dominate the contemporary scientific literature on the topic.” Romm, on the other hand, acknowledges those same lower estimates, but maintains that they omit “slow feedback” pathways and consequently greatly underestimate the likely warming from a given increase in CO₂. “Anyone who tells you the recent literature suggests things will be *better* than we thought hasn’t read the recent literature,” he goes on to say.

We do not need to know who is right here to see that we are a long way from Hayek’s ideal, in which policy analysts of all ideological persuasions would work from a common range of scientific findings. Instead, we see those with progressive political inclinations highlighting estimates from the pessimistic end of the scientific consensus while those with conservative inclinations pick a team of optimistic experts.

Decentralized knowledge and free market environmentalism

Let’s turn now from scientific knowledge to dispersed knowledge. “Knowledge of time and place,” as Hayek calls it, is both impossible to centralize and, at the same time, essential to efficient decision- making. Yet localized knowledge is not enough in itself. As Hayek puts it,

[T]he “man on the spot” cannot decide solely on the basis of his limited but intimate knowledge of the facts of his immediate surroundings. There still remains the problem of communicating to him such further information as he needs to fit his decisions into the whole pattern of changes of the larger economic system.

The key to making global information available to local decision makers is the price system. If the price of an input you use for your farm or factory goes up, you don’t need to know why—you only need to know that it has somehow become scarcer, and that you should, if possible, use less of it. Similarly, if the price of something you produce goes up, all you know is that you should do your best to produce more.

No one today, whether progressive, conservative, or libertarian, disputes the importance of the price system when it comes to ordinary goods and services. Centrally planned socialism without prices is an idea people read about only in books on the history of economic thought. However, the role of prices in environmental economics remains controversial.

The movement that champions the use of prices to solve environmental problems goes by the name of *free market environmentalism* (FME). FME rests on three pillars: property rights, the rule of law, and markets. Where all three are present, prices emerge for environmental resources. Those prices, in turn, let producers and consumers combine their local knowledge of time and place with global information about relative scarcities. All parts of the system are supposed to work together to reconcile conflicting human preferences for use of scarce environmental resources in an efficient and nonviolent manner.

The Property and Environmental Research Center (PERC) in Bozeman, Montana is a leader of the FME movement. Its website provides numerous case studies in which ranchers, farmers,

fishers, loggers, and others have created workable property rights and markets for grazing land, water rights, fishing quotas, and timberland. Yet, for all the credit it deserves, there are problems that FME cannot solve.

In his book “Free Market Environmentalism for the Next Generation,” Terry Anderson, Senior Fellow and former President at PERC, and his co-author Donald Leal, identify climate change and greenhouse gas emissions as the most intractable issue—“the mother of all global problems.” There are no property rights in the global atmospheric commons. Partly, they say, that is because competition for use of scarce atmospheric resources arose before technology was available to define and enforce property rights, and partly because competing users—people with smokestacks and people who want to breathe clean air—can’t agree on who should own those rights. Global heterogeneity, high costs of measuring and monitoring, and lack of global enforcement mechanisms further frustrate efforts to bring property rights and prices to bear on greenhouse gas emissions.

Finding that climate change is not amenable to FME prescriptions, Anderson’s response is to give up on emissions control and focus on adaptation to climate change. There he feels on safe ground. In a nod to Hayek, he maintains that falling prices for beachfront property and rising prices for food and water will guide individuals, “based on factors that are time- and space specific,” to reallocate inputs and outputs in order to adapt appropriately. Cities will be rebuilt on higher land, fish farms will replace ocean fisheries, heat-tolerant crops will be planted, and so on.

But what about a price for the most important scarce resource of all—the limited ability of the earth’s atmosphere to absorb greenhouse gas emissions? Anderson recognizes the theoretical desirability of such a price, but dismisses any possibility of establishing one.

Anderson considers a cap-and-trade approach. He grudgingly admits that cap-and-trade is a “market-like” mechanism, analogous to tradeable fishing quotas (which he endorses), even though the initial allocation of property rights in both cases is politically determined rather than spontaneously emergent. However, he considers it unlikely that most governments will be willing to agree on a cap-and-trade scheme and pointless for any one country to implement cap-and-trade in isolation.

And what about a carbon tax? The administrative problems of a carbon tax are not negligible, but they could well be less than those of a global cap-and-trade scheme. Yet Anderson refuses to consider a carbon tax on grounds that seem more ideological than pragmatic:

Putting aside the theoretical potential for either [cap-and-trade or a carbon tax] to work, let us emphasize that a carbon tax is hardly a “market like” approach, let alone an example of free-market environmentalism. Yes, a carbon tax would increase the price of carbon-related products and provide an incentive for people to reduce their use of such products, but it in no way creates tradeable property rights.

So, a carbon tax might work in theory. It might simplify the administrative problems of a global cap-and-trade scheme, even if it faced the same political headwinds. Yet, Anderson gives carbon

taxes only a single dismissive paragraph because they are not sufficiently “market-like” and because they are not based on tradeable property rights.

PERC is not alone in this attitude. Other would-be free market environmentalists—notably, those from the Austrian school of economics—are even more contemptuous of carbon taxes and even more skeptical about cap-and-trade. For details, I refer readers to an exchange of [articles](#), [comments](#), [rejoinders](#), and [blog posts](#) that Walter Block and I engaged in a couple of years ago.

Markets without prices or prices without markets?

Clearly, FME faces a dilemma when it comes to greenhouse gases and climate change. Markets that generate prices based on securely enforced property rights are the gold standard for policy, but what if that option is not available? We must then choose between markets without prices or prices without markets.

Markets without prices are what we have now. We have markets for energy, capital goods, and consumer goods. Within each of those markets, producers and consumers make choices based on their own knowledge of time and place and on the prices of labor and materials—but with no prices to carry knowledge of scarcities that exist at the planetary level. As producers, should we use electric power from the coal-fired grid or install solar panels? There is no price on greenhouse gas emissions to help guide our choice. As consumers, should we install heat-conserving blinds or buy a new jet ski? There is no carbon price to help us make up our minds.

With a carbon tax, we still would not have a scarcity prices that were generated in real markets, but we would at least have prices. As the effects of the carbon tax rippled through the price system, it would transmit the kind of knowledge Hayek regarded as essential—knowledge about the global opportunity cost of carbon emissions that local decision makers could then integrate with their knowledge of time and place to make better decisions. Those would very likely include decisions leading to a slightly slower pace of climate change, and hence to invaluable extra years to adapt. They would also include decisions about the best techniques for adaptation itself and whether to pour millions of tons of carbon-intensive concrete for sea walls, or to move inland.

In short, if you can’t have both prices and markets, it seems that you choose markets without prices if you think ideologically, but prices without markets if you think pragmatically. We would all prefer to have both, but if that is not to be an option, we have to choose.

Which side would Hayek have come down on? Going by what he wrote about the proper roles of scientific and dispersed knowledge, I have to conclude that he would have favored a carbon tax over doing nothing.