

## CLIMATE TALK

### **Climate Policies: Market Signals, Clubs, and Nudges**

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Earlier this month Richard Thaler, an economist who has who has long questioned an underlying assumption of his discipline, was awarded a Nobel Prize. The assumption is that of “economic rationality,” the idea that in making our choices in the marketplace, we carefully weigh perceived gains and losses and act to maximize our net benefits. While Thaler does not deny the applicability of this traditional model over a wide range of behavior, an over-emphasis on monetary factors alone, and specifically to the exclusion of “psychological factors,” leaves unexplained certain observed behaviors. With this award, behavioral economics, as it is known, has been welcomed into the mainstream of economic science.



These thoughts crossed my mind as I was reading selectively from “Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming,” edited by Paul Hawken, and published earlier this year. The book is encyclopedic, written we are told by “70 individuals from 22 countries” each with “extensive academic and professional experience.” This research team identified, measured, and ranked 80 of the most important things that could be done globally to reduce current and potential greenhouse gas emissions. The solutions derive from extensive reviews of the scientific literature, and are “reviewed and validated,” Hawken tells us, by an outside advisory group of 120 individuals. Succinct and informative summaries of each issue and solutions are provided, and organized under eight broad topics, e.g. energy. This brevity and organization, interspersed with a variety of colorful and interesting photographs, along with the book’s generally positive tone, make it an enjoyable reading experience if consumed over several days or weeks.

What do we learn regarding the relative efficacy of these “one hundred techniques and practices”? There are two ways to answer this question. The first centers on their technical efficiency, and is the basis for the ranking given in Drawdown. That is, what amount of total greenhouse gases would each step “potentially avoid [emitting into] or remove from the atmosphere”? Although data availability and the very nature of some measures did not always allow for precise quantification, the rankings obtained in three sectors of the economy—food, energy, and land use—are of particular interest given their overall importance in The Plan, and their relevance for our own communities and regional economy. They are onshore wind turbines (#2), reduced food waste (#3), plant rich diets (#4), solar farms (#8), silvopasture (#9), rooftop solar (#10), regenerative agriculture (#11), temperate forests (#12), conservation agriculture (#16), farmland restoration (#23), and forest protection (#38).

The second way to evaluate the importance of each measure is to look at its economic efficiency. Which seem likely to give us the biggest bang for the buck, i.e., the relative cost-effectiveness of each? Unfortunately, detailed estimates for every measure could not be calculated owing to difficulties estimating costs in several cases, and of assigning monetary values to some of the favorable consequences of reducing greenhouse gases. Yet, what The Plan does offer for about 60 of these steps

is the so-called “lifetime” or “net operating savings” over “continuing business as usual” for the next three decades (2020-50). Combining this with the rankings given for greenhouse gas reduction, we obtain I believe a proxy for their relative economic efficiency.

Not surprisingly, many of the major cost-saving measures (I looked at those yielding a lifetime net saving of at least \$1 trillion) are also at the top of our list for gigaton reductions in emissions. Globally, wind turbines would save economies \$7.4 (trillion) during this period, solar farms \$5.0, rooftop solar \$3.5, conservation agriculture \$2.1, regenerative agriculture \$1.9, and farmland restoration \$1.3. Obviously, other steps in The Plan may result in similar cost-savings to those I have listed, e.g., mass transit, district heating, airplanes, walkable cities, but I choose to draw attention to those opportunities that seem most relevant for our region.

Finally, we may approximate the overall efficiency of The Plan by comparing the total net cost of its adoption over the 30-year period (\$27 trillion), with its total net or operational saving (\$74). A ratio of benefits to costs of over 3 to 1 like this certainly should pique the interest of many investors as increasingly we read and hear about.

We come finally to the question of political economy: how do we actually go about this? Although Drawdown is often mum on explicit public policies, implicitly the solutions described must involve a combination of the two or three broad approaches that political action usually takes. First, changing market signals or incentives through subsidies and taxes (“carrots and sticks”) to achieve the desired outcomes. Second, governmental regulation or prohibition of the undesired market behavior. I’ll call this “the club,” since that’s how compulsory control is viewed by those who oppose such action, or “the sword,” since those who favor and support the control might appeal to Lady Justice, impartially weighing opposing interests and upholding with quick or even deadly force a society’s underlying codes of fairness and ethical conduct.

There is, I’d suggest, a third way in which public policy might manifest itself. Call it voluntarism. It encompasses instances where individuals, organizations, businesses, and civic institutions voluntarily undertake actions in which neither economic incentives nor compulsion are the motivating forces. I believe the empirical and theoretical work of behavioral economists are highly applicable to this third type of decision-making. Thaler calls his approach “libertarian paternalism.” It centers on the importance of “choice architects,” anyone who has “responsibility for organizing the context in which people make decisions.” Choice architects are everywhere —sellers, managers, fund raisers, government officials, teachers, even parents! All seek to “nudge” others to engage in behavior desired by the choice architect. Although there is no compulsion (thus “libertarian”), there is a plan or design (thus “paternalism”).

With a little thought, I believe, we could come up with ideas on how “nudges” might be used improve our decision-making on the environmental issues raised in Drawdown. After all, the full title of Thaler’s 2008 book is “Nudge: Improving Decisions About Health, Wealth, and Happiness.” Ultimately, those are the three things that are seriously threatened by continuing on our current course of greenhouse gas emissions. In addition to carrots and sticks, or clubs and swords, perhaps we need to include a few more “gentle nudges” in our private and public tool kit to address the issues of climate change.

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