Review of Environmental Economics and Policy

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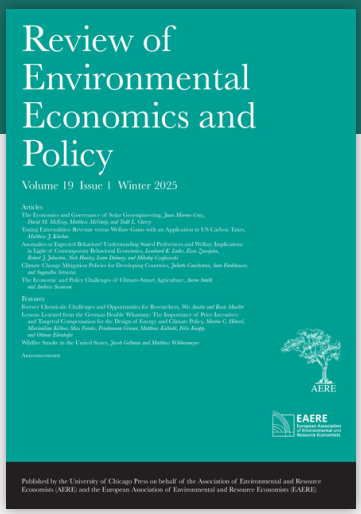

Volume 19, Number 1
Winter 2025

PREVIOUS ISSUE

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Front Matter

First page

ARTICLES

FREE • EDITOR'S CHOICE

The Economics and Governance of Solar Geoengineering

Juan Moreno-Cruz, David M. McEvoy, Matthew McGinty, and Todd L. Cherry

pp. 1–24

Abstract

Limited progress on reducing global greenhouse gas (GHG) emissions has sparked increasing interest in whether the global community should consider the use of solar geoengineering (SGE)—technologies designed to reflect sunlight away from Earth—as a short-term approach to reduce climate change damages. Through theory, surveys, simulations, and experiments, economists have studied the strategic implications of SGE, how these technologies interact with incentives to mitigate GHG emissions, and the challenges of governing them. This article provides a comprehensive review of the literature, starting with how SGE is incorporated into economic models. One issue is whether SGE will crowd out efforts to mitigate GHG or will enhance mitigation efforts. We identify conditions under which each of those results is likely. We review the economics of governing SGE, particularly the issue of a single actor unilaterally deploying SGE to manipulate global temperatures. Our review synthesizes the main findings from the literature with the goal of better informing global climate policies.

Taxing Externalities: Revenue versus Welfare Gains with an Application to US Carbon Taxes

Matthew J. Kotchen

pp. 25–47

Abstract

This article illustrates how the ratio of welfare gains to tax revenue plays a central role in framing political-economy and efficiency issues in the use of Pigouvian taxes to correct externalities. To date, the comparison of welfare and revenue has played virtually no role when economists recommend such taxes. This article presents a conceptual framework and then shows that the ratio of welfare gains to tax revenue is increasing in relation to both the marginal external costs and the market responsiveness to the tax in equilibrium. Further, the article illustrates the wide range of potential results with carbon taxes applied to different fossil fuels in the United States. For example, assuming a social cost of carbon and a carbon tax equal to $50 per ton, the central estimates imply ratios of the welfare gain to tax revenue of 12.1 for coal, 0.36 for natural gas, and very close to 1 for diesel and gasoline. When all four fuels are combined, the ratios range between 0.9 and 1.8. The article concludes with a general appeal for economists to pay more attention to the relative magnitudes of efficiency gains and tax revenue when analyzing and advocating for externality-correcting taxes.

Anomalies or Expected Behaviors? Understanding Stated Preferences and Welfare Implications in Light of Contemporary Behavioral Economics

Leonhard K. Lades, Ewa Zawojska, Robert J. Johnston, Nick Hanley, Liam Delaney, and Mikołaj Czajkowski

pp. 48–68

Abstract

The stated preference (SP) literature contains an expansive body of research on behavioral "anomalies," typically understood as response patterns that are inconsistent with choice theory in neoclassical economics. Although this literature often implies that anomalous behaviors are unique to SPs, widespread behavioral economic evidence of similar patterns across incentivized choice settings raises the potential for an alternative interpretation: SP "anomalies" reflect expected behaviors once systematic deviations from the standard economic model are considered. The parallels between SP anomalies and insights from behavioral economic revealed preference (RP) studies suggest that differences between SPs and RPs should not determine whether SPs are valid for applied welfare analysis. Moreover, these parallels suggest that behavioral economic approaches to calculating welfare implications of nonstandard behaviors may be applicable to SP studies. We review three such approaches (preference purification, reliance on conditions that encourage truthful preference disclosure, and the Bernheim-Rangel framework) and discuss their potential implications for SP research. We also consider more general insights from behavioral welfare economics for SP welfare analysis. We close by identifying promising avenues for interdisciplinary work at the intersection of SP research and behavioral welfare economics, to develop holistic frameworks with guidance for applied welfare economics in the presence of anomalous yet predictable behaviors.

Climate Change Mitigation Policies for Developing Countries

Juliette Caucheteux, Sam Fankhauser, and Sugandha Srivastav

pp. 69–89

Abstract

Following the Paris Agreement, many low- and middle-income countries (LMICs) have adopted climate change targets. They will need climate policies that are suited to their socioeconomic and institutional contexts. Conventional policy prescriptions are geared toward high-income countries with entrenched high-carbon structures, universal energy access, deep financial markets, formal economies, privatized power markets, a capable public sector, and relative macroeconomic stability. Not all of these assumptions generalize to LMICs. Here, we synthesize what is known about emissions reduction policies in LMICs. We find a strong emphasis on finance interventions and regulatory measures, including the need for power sector reform. Current scholarship focuses heavily on removing existing price distortions, with less emphasis on carbon pricing. Carbon pricing is discussed mostly for middle-income countries, where some pilot schemes exist and institutional capacity constraints are less severe. Prescriptions for skills-related policies focus on capacity building and preparing a young population for a changing labor market rather than reskilling the existing workforce.

The Economic and Policy Challenges of Climate-Smart Agriculture

Aaron Smith and Andrew Swanson

pp. 90–117

Abstract

Climate-smart agriculture promises to mitigate climate change by sequestering carbon in soils on working lands. However, this promise faces substantial policy challenges due to ecological variation, costly measurement, and uncertainty. We summarize the latest scientific literature on carbon sequestration in agricultural soils, and we describe the current policy environment. With that background, we present an economic framework for policy analysis. We conclude by emphasizing (*a*) the need for better measurement and for policy that is robust to poor measurement, and (*b*) the importance of improving agricultural productivity to avoid future carbon losses from expanded agricultural land use.

FEATURES

Forever Chemicals: Challenges and Opportunities for Researchers

Wes Austin and Rosie Mueller

pp. 118–130

Abstract

There is substantial academic, regulatory, and public attention to per- and polyfluoroalkyl substances (PFAS), often dubbed “forever chemicals” due to their resistance to degradation. PFAS are used in a wide variety of production processes and consumer products, are found in food and drinking water sources, and are subsequently present in samples of human blood, breast milk, and environmental media collected in the United States and globally. Exposure to PFAS has been linked to a litany of health effects, including kidney and testicular cancer, immune system hypersensitivity and suppression, endocrine disruption, and adverse reproductive outcomes such as decreased fertility and lower birth weights. However, certain health outcomes are understudied in human populations, and many questions remain unanswered, with notable gaps in the literature regarding exposure pathways, health burdens, replacement PFAS (new persistent chemicals), and disparate impacts. Regulation of PFAS is just beginning for many environmental pathways, and research opportunities described in this article can potentially inform the development of new policies to address the PFAS problem.

Lessons Learned from the German Double Whammy: The Importance of Price Incentives and Targeted Compensation for the Design of Energy and Climate Policy

Martin C. Hänsel, Maximilian Kellner, Max Franks, Friedemann Gruner, Matthias Kalkuhl, Felix Knopp, and Ottmar Edenhofer

pp. 131–137

Abstract

Russia’s invasion of Ukraine has led to unprecedented geopolitical and global economic challenges, including a severe shortfall in energy supply and a substantial increase in energy prices. Even before that crisis, many governments were aiming to phase out fossil energy. Here, we focus on the importance of demand-side policies, using the German double whammy as a case study. This was a large-scale policy package to incentivize energy savings and compensate households using a so-called price brake. We explain that the natural gas “price brake” was in fact not a price brake but, quite the contrary, maintained price incentives in combination with financial lump-sum transfers to natural gas consumers. We present an assessment of key features and distributional consequences of the “price brake” and then discuss the lessons learned for future policy design in Germany and beyond: First, maintaining strong price incentives for reducing demand can be politically feasible. Second, hardship can be avoided at the least economic cost if transfers are targeted to lower-income consumers, which is not the case in Germany.

Wildfire Smoke in the United States

Jacob Gellman and Matthew Wibbenmeyer

pp. 138–150

Abstract

As large wildfires grow more frequent, the United States is seeing increasing impacts from smoke. Wildfire smoke frequently causes particulate matter pollution to exceed federal standards, and these smoke impacts are expected to grow over the century as the climate warms. Drawing from the economics and social science literature, this article argues that increasing wildfire smoke pollution is a serious threat to health, the economy, and human well-being. The article identifies areas in which to prioritize policy attention, such as increasing funding for land management activities and leveraging air quality regulations to incentivize wildfire hazard mitigation.

Announcements

pp. 151–153

First page

MOST READ MOST CITED

Of all published articles, the following were the most read within the past 12 months.

OPEN ACCESS

The Economic Impacts of Natural Disasters: A Review of Models and Empirical Studies

W. J. Wouter Botzen, Olivier Deschenes, and Mark Sanders

OPEN ACCESS

The Impacts of Environmental Regulations on Competitiveness

Antoine Dechezleprêtre and Misato Sato

OPEN ACCESS

Marine Plastic Pollution: Sources, Impacts, and Policy Issues

Bethanie Carney Almroth and Håkan Eggert

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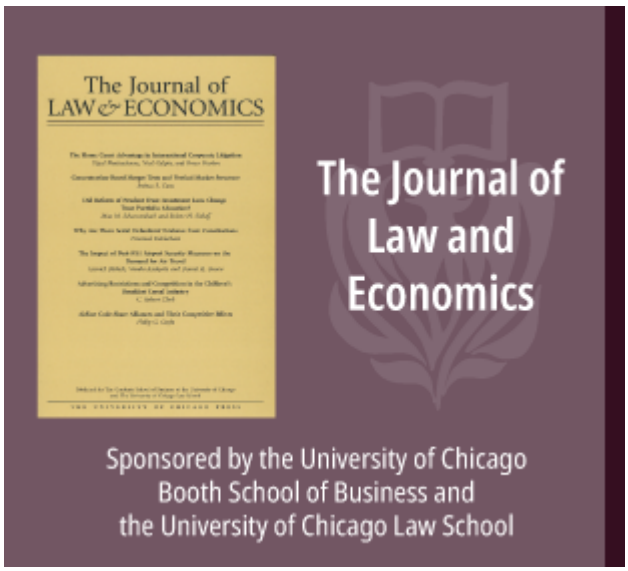
Lessons Learned from Three Decades of Experience with Cap and Trade

Richard Schmalensee and Robert N. Stavins



ABOUT THE JOURNAL

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on environmental economics and related policy.

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*Journal Impact Factor™ 2023 courtesy of the *Journal Citation Reports* (*JCR*)™ (Clarivate 2024). Scopus CiteScore (Elsevier B.V.). Retrieved June 2024 from scopus.com/sources.

PRESS RELEASES MEDIA

University of Chicago Press journals earn top rankings in 2023 indices
September 17, 2024

University of Chicago Press journals earn top rankings in 2022 indices
October 16, 2023

University of Chicago Press journals earn top rankings in 2021 indices
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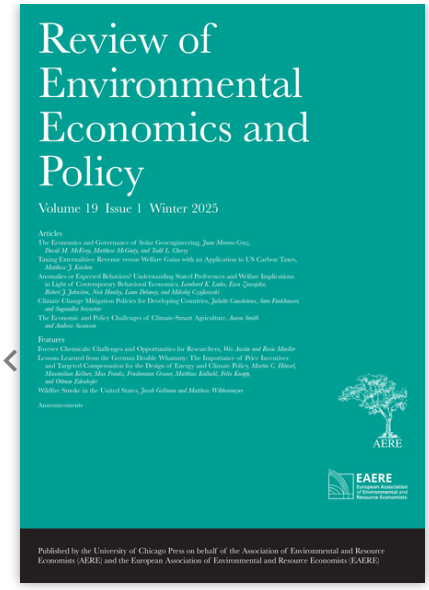

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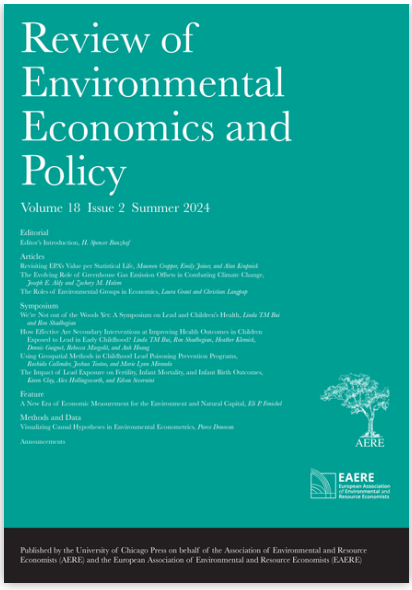

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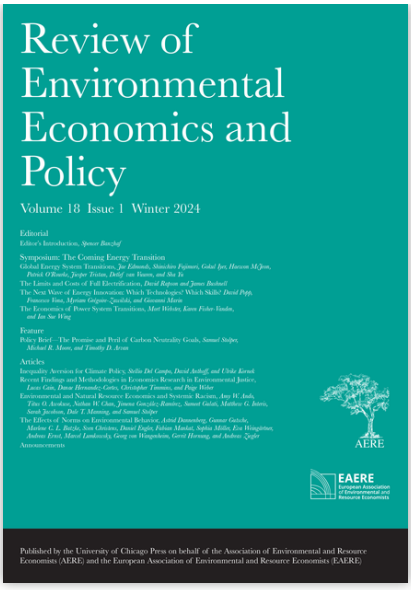

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