MIT Economics

AARON B. BERMAN

OFFICE CONTACT INFORMATION
MIT Department of Economics
77 Massachusetts Avenue, E52-301
Cambridge, MA 02139
bermana@mit.edu
https://tinyurl.com/bermana

HOME CONTACT INFORMATION
97 Inman Street #2
Cambridge, MA 02139
Mobile: 301-767-7687

MIT PLACEMENT OFFICER
Professor David Autor
dautor@mit.edu
617-253-4669

MIT PLACEMENT ADMINISTRATOR
Mrs. Shannon Robinson
shmay@mit.edu
617-324-5857

DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2026
DISSERTATION: "Essays in Environmental and International Economics"

DISSERTATION COMMITTEE AND REFERENCES

Professor Benjamin Olken
MIT Department of Economics
77 Massachusetts Avenue, E52-542
Cambridge, MA 02139
617-253-6833
bolken@mit.edu

Professor David Atkin
MIT Department of Economics
77 Massachusetts Avenue, E52-550
Cambridge, MA 02139
203-936-9367
atkin@mit.edu

Professor Arnaud Costinot
MIT Department of Economics
77 Massachusetts Avenue, E52-534
Cambridge, MA 02139
617-324-1712
costinot@mit.edu

Professor Clare Balboni
London School of Economics and Political Science
32 Lincoln's Inn Fields
London WC2A 3PH, United Kingdom
c.a.balboni@lse.ac.uk

PRIOR EDUCATION

Yale University — 2017
MPH, Health Policy

Yale University — 2016
BA, Global Affairs, *summa cum laude*

CITIZENSHIP United States

GENDER Male

LANGUAGES English (native), Spanish, Mandarin (advanced), Portuguese (intermediate), Indonesian, Cantonese (beginner)

FIELDS Environmental, Trade, Development

TEACHING EXPERIENCE

Environmental Economics (PhD, MIT course 14.475) 2026
Teaching Assistant to Profs. Ben Olken and Jacob Moscona

Applied Economics for Managers (MBA, MIT course 15.024) 2024
Teaching Assistant to Profs. Tavneet Suri and Namrata Kala

BREAD-IGC Virtual PhD Lectures on Environmental Economics 2023
Teaching Assistant to Profs. Ben Olken and Seema Jayachandran

Linear Algebra & Real Analysis I (Harvard course Math 23a) 2018
Teaching Assistant to Prof. Paul Bamberg

RELEVANT POSITIONS

Research Assistant to Profs. Ben Olken and Jacob Moscona 2025-2026
Short-term Consultant, World Bank, Jakarta 2024
Research Assistant to Prof. Clare Balboni 2021-2022
Research Assistant to Profs. Rema Hanna and Ben Olken, 2017-2020
Evidence for Policy Design at Harvard Kennedy School

FELLOWSHIPS, HONORS, AND AWARDS

Dartmouth Globalization PhD Fellowship 2025
George and Obie Shultz Fund Grant, MIT 2022, 2023, 2024
Martin Family Society of Fellows for Sustainability, MIT 2023
NBER Pre-Doctoral Fellowship in Health and Aging 2022
National Science Foundation Graduate Research Fellowship 2020
Knight-Hennessy Scholarship (declined) 2020
Alpheus Henry Snow Prize, Yale University (top undergraduate honor) 2016
Saybrook College Fellows' Prize, Yale University 2016
Dupuy Graduation Prize, Yale University 2016
Phi Beta Kappa, Yale University 2015
Richard U. Light Fellowship for East Asian Language Study 2013

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review*, *Review of Economic Studies*, *American Economic Journal: Economic Policy*

Service:
MIT Presidential Advisory Cabinet (2021-2022)
MIT-Harvard PhD Application Assistance & Mentoring Program (2020-2023)

Departmental:
Organizer, MIT Environmental Economics Lunch (2024-2025)
Organizer, MIT Development Tea (2022-2024)

PUBLICATIONS

The Economics of Tropical Deforestation
(with Clare Balboni, Robin Burgess, and Benjamin A. Olken)
Annual Review of Economics 15, pp. 723-754, September 2023.

Two factors have elevated recent academic and policy interest in tropical deforestation: first, the realization that it is a major contributor to climate change; and second, a revolution in satellite-based measurement that has revealed that it is proceeding at a rapid rate. We begin by reviewing the

methodological advances that have enabled measurement of forest loss at a fine spatial resolution across the globe. We then develop a simple benchmark model of deforestation based on classic models of natural resource extraction. Extending this approach to incorporate features that characterize deforestation in developing countries—pressure for land use change, significant local and global externalities, weak property rights, and political economy constraints—provides us with a framework for reviewing the fast-growing empirical literature on the economics of deforestation in the tropics. This combination of theory and empirics provides insights not only into the economic drivers and impacts of tropical deforestation but also into policies that may affect its progression. We conclude by identifying areas where more work is needed in this important body of research.

RESEARCH PAPERS

Pay a Man to Fish: Subsidies, Trade, and Cooperation in the Global Commons (Job Market Paper)

Abstract and draft forthcoming

Clearing the Air on the Benefits and Costs of Road Infrastructure
(with Clare Balboni, Johannes Boehm, Lorenzo Marzano, and Mazhar Waseem)

Investments in transportation infrastructure can yield sizable trade and commuting cost gains, but may also contribute to damaging local air pollution from increased vehicle traffic. Accounting for such costs is especially important in developing country cities, which are making significant investments in expanding road networks but where high ambient pollution concentrations contribute to severe health impacts. We develop a quantitative urban equilibrium model, integrating a novel granular atmospheric model of pollution dispersion, in order to estimate the impacts of investing in urban roads accounting for both gains from economic integration and costs from local pollution exposure. We estimate the model using high-resolution data on emissions, pollution transport, commuting and goods trade in Lahore, Pakistan, one of the world's most polluted cities. Counterfactual simulations consider the aggregate and distributional implications of major road infrastructure projects in the city.

Environmental Regulation with Irreversible Investments: Evidence from High Plains Aquifer Depletion
(with Nathaniel Hickok)

Many of the world's major aquifers are rapidly depleting from agricultural irrigation, generating dynamic common-pool externalities by raising future extraction costs. While Pigouvian taxation can restore the first-best outcome, such policies are often infeasible due to political and technological constraints. By contrast, extensive-margin policies that regulate well entry are second-best but administratively simple. We study this tradeoff by developing and estimating a dynamic model of farmers' joint well-drilling and water-use

decisions using a novel dataset of aquifer levels, agricultural water use, and crop production in the Kansas High Plains Aquifer from 1959–2022. We find that entry fees can create substantial welfare gains but that their effectiveness erode rapidly over time. In 1960, entry fees would have captured three-quarters of the gains of Pigouvian taxation, by 1980 only one-quarter, and today virtually none. This rapid decline reflects negligible marginal extraction costs relative to fixed well drilling costs, ensuring depletion becomes largely locked in once wells are sunk. Together, these findings highlight the importance of irreversible investments in constraining second-best environmental regulations.

Out with the Old, In with the New: Equity and Efficiency of Secondary Market Subsidies for Electric Vehicles
(with Nathaniel Hickok and Dam Linh Nguyen)

We evaluate the relative cost effectiveness and distributional impacts of primary- and secondary-market subsidies for electric vehicle adoption. We develop a simple theoretical framework that highlights the ambiguous cost-effectiveness of the two subsidy designs. Relative to subsidies for purchases of used electric vehicles, subsidies for new purchases always induce greater adoption. However, they also lead to more inframarginal government spending due to consumer selection into resale. We study this trade-off empirically by proposing a dynamic model of the vehicle market, which captures sorting of consumers into resale through endogenous vehicle replacement decisions. To analyze the equilibrium consequences of the two subsidy designs, we calibrate the model using granular data on car registrations and transactions in Texas from 2015 to 2022. Counterfactual results indicate that, in our setting, secondary-market subsidies: (1) are more cost-effective than primary-market subsidies due to large decreases in inframarginal spending; and (2) achieve more progressive distributional impacts.

Global Public Goods and Local Public Services: Evidence from Polio Eradication in Pakistan

What are the consequences of limited state capacity in developing countries for the pursuit of global public goods provision? I study this question in the context of polio eradication in Pakistan, where the disease remains endemic and where policy commitment to eradication has escalated over the past decade. Exploiting the incidence of genetic mutations in the oral polio vaccine virus that cause localized outbreaks, I test whether a short-term increase in the intensity of polio eradication activity crowds out the receipt of routine childhood immunizations delivered primarily in local health clinics. I find empirical support for a crowd-out effect: children born in a quarter-year of intensified polio immunization activity are 8.9% less likely to have received the BCG (tuberculosis) vaccine and 19.5% less likely to have received the first dose of the diphtheria, pertussis, and tetanus (DPT) vaccine. I find evidence that these effects are driven mainly by the supply of, rather than demand for, vaccines and health services. My results have implications for the design of health and vaccination campaigns and

for assessment of the local costs of public goods provision in developing countries.

RESEARCH IN PROGRESS

Firm-Level Adaptation to Carbon Border Taxes: Evidence from a Randomized Evaluation
(with David Atkin and Banu Demir)

Reducing firm-level emissions while minimizing impacts on economic growth has become a central dilemma facing policymakers in low- and middle-income countries, especially as countries around the world have begun using trade policy to tax the carbon content of imports. In this project, we experimentally evaluate three interventions—consisting of technical training and subsidized loans for investments—aimed at mitigating the economic costs of the European Union's Carbon Border Adjustment Mechanism (CBAM) on small and medium enterprises in Türkiye. The first intervention focuses on direct carbon mitigation measures; the second focuses on product innovation to move firms toward greener product mixes; and the third focuses on improving firm-level productive efficiency. In the first wave of the experiment, we have randomized over 500 Turkish manufacturing firms using a clustering algorithm to maximize power to detect domestic spillovers (i.e., leakage) of the intervention to untreated firms. Combining newly collected survey data on firm-level investments, production practices, and carbon emissions with administrative data on the universe of Turkish firm-to-firm linkages and sales, we will assess the tradeoffs between environmental and firm growth outcomes and explore whether policies can simultaneously achieve both goals.

Environmental Spillovers of Trade Policy
(with David Atkin and Banu Demir)

A large share of trade tariffs in recent years have targeted heavily polluting industries such as iron and steel production, raising the possibility that trade policy focused on these industries may have unintended environmental consequences. We leverage firm-level administrative data from Türkiye to estimate the effects of the 2018 tariff increases implemented by the United States and subsequent retaliatory tariffs implemented by China, the European Union, and other trading partners. First, we document that Turkish iron and steel firms with higher pre-2018 export shares to the US differentially reallocated exports to the EU after tariffs on Türkiye were introduced. Second, we provide evidence that these Turkish firms concurrently increased their investments in less carbon-intensive production through purchases of specific “green” production technologies prioritized by EU importers. We plan to conduct a full accounting of the carbon emissions consequences of this tariff-driven trade reallocation, decomposing technique, scale, and composition effects.

Spatially Governing the Commons
(with Karl M. Aspelund)

Environmental regulators seek to achieve resource sustainability targets in the face of ecological and economic shocks that affect different areas, producers, and time periods unevenly. While alternative instruments such as taxes, quotas, closures, or input restrictions can deliver the same stock targets in expectation, they differ in how they expose participants in the commons to volatility in harvests and profits. Inequality aversion, diminishing returns to contemporaneous harvests, and the shadow value of future resource stocks make differences in volatility welfare-relevant from a social planner's perspective. We develop a framework, nesting canonical results from the prices versus quantities literature, to evaluate when and how instrument design matters under uncertainty. We use the framework to illustrate how instrument choices in different areas can be cast as a portfolio-choice problem in which regulators can choose levels of risk over aggregate harvests or certain distributional outcomes. The framework explains why policies that appear second-best in a deterministic setting, such as input restrictions or long seasonal closures, can be preferred once their risk-stabilizing properties are recognized. To apply our framework, we collect detailed harvest, price, and ecological data from the U.S. Atlantic scallop fishery, one of the nation's highest-value fisheries, and illustrate how alternative policy mixes can meaningfully impact welfare outcomes under different degrees of inequality aversion.

Internalizing Environmental Externalities: A Coasean Approach to Urban Solid Waste Management in Kampala, Uganda
(with Mychaela Paetow)
Funding: IGC SPF Grant

Cities in developing countries are generating increasing volumes of solid waste, straining existing waste management systems. Open dumping and burning are commons means of disposal, generating meaningful environmental and health externalities, especially in low-income communities and informal settlements. We partner with the Kampala Capital City Authority to test a new intervention designed to deter dumping: installing nets to catch household solid waste that would otherwise flow through rainwater drainage channels, causing flooding downstream. We are piloting a mechanism to elicit downhill households' willingness-to-pay, and uphill households' willingness-to-accept, to install nets along shared drainage channels, facilitating Coasean bargaining to realign private and social costs from improper waste management practices.

The Economics of Informal Recycling Markets: Evidence from Indonesia's Waste Banks
(with Mychaela Paetow)
Funding: J-PAL K-CAI

China's Fishing Subsidies in the 21st Century
(with Andrés de Loera)