

Takanao Tanaka

UC Berkeley
Agricultural and Resource Economics

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Education

2021 – PhD in Agricultural and Resource Economics, UC Berkeley
2019 – 2021 MPhil in Social Science, Hong Kong University of Science and Technology
2014 – 2016 M.A. in Public Policy, U Tokyo & National U of Singapore
2009 – 2014 B.A. in Economics, Keio University

Field Interest

Energy and Environmental Economics, Public Economics, Industrial Organization

References

Joseph Shapiro

Agricultural & Resource Economics
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James Sallee

Agricultural & Resource Economics
sallee@berkeley.edu
(510) 643-5519

Reed Walker

Haas School of Business
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Job Market Paper

Electricity Supply Shocks and Manufacturing: Evidence from the Fukushima Nuclear Accident (with Daiji Kawaguchi)

Abstract: We show that adverse shocks to electricity supply—an input accounting for only 2% of revenue—can cause substantial and persistent declines in industrial production. Using confidential establishment-level data and instrumenting with initial supply conditions, we find that shocks following the 2011 Fukushima nuclear accident reduced Japanese manufacturing electricity use by 6.6% and output by 1.7%, implying annual output losses of 4.9 trillion Japanese yen (50 billion US dollars). Establishments adjusted little through energy substitution, product switching, outsourcing, within-firm reallocation, or relocation. Our production function highlights two mechanisms that amplify output losses: establishments cannot easily substitute other inputs for electricity, and reduced electricity use leaves machinery and equipment temporarily idle. We quantify how electricity-market reforms, such as regional market integration, can mitigate these losses.

Working Papers

Combating Noise Pollution: Policy, Exposure, and Welfare (with Takeru Sugawara and Shinsaku Takikawa)

Abstract: This paper provides the first evidence on how national noise-control policies affect noise exposure and welfare. We assemble two decades of largely untapped nationwide measurements of road-traffic noise from over 14,000 monitoring points in Japan and detailed data on noise-mitigation policies obtained through freedom-of-information requests. From 2002 to 2022, roadside noise fell by 2.8 decibels, equivalent to roughly a 20% decline in perceived loudness. We attribute about 70% of this decline to noise-control policies, particularly tighter vehicle noise-emission standards and the expansion of low-noise pavement. Residents are willing to pay 1.3% of residential land value for a one-decibel reduction in road-traffic noise. We estimate that Japan's national noise-control policies generated approximately 5 trillion yen (US\$38 billion) in benefits over two decades. These benefits suggest substantial unrealized gains in countries with weaker noise-control policies, such as the United States.

Publications

1. Air Pollution and the Airborne Diseases: Evidence from China and Japan (with Guojun He and Yuhang Pan) *Journal of Environmental Economics and Management*, 2025
2. Energy Saving May Kill: Evidence from the Fukushima Nuclear Accident (with Guojun He) *American Economic Journal: Applied Economics*, 2023
3. Short and Medium-Term Impacts of Strict Anti-Contagion Policies on Non-COVID-19 Mortality in China (with Qi J, D Zhang, et al.) *Nature Human Behaviour*, 2022
4. Increase in suicide following an initial decline during the COVID-19 pandemic in Japan (with Shohei Okamoto) *Nature Human Behaviour*, 2021
5. The Short-term Impacts of COVID-19 Lockdown on Urban Air Pollution in China (with Guojun He and Yuhang Pan) *Nature Sustainability*, 2020

Works in Progress

1. Environmental Regulation, Cost, Price and Welfare (*Census project approved*)

Fellowships, Awards, and Grants

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| 2026 – 2028 | Environmental Research Grant, Sumitomo Foundation, approx. \$31,600. |
| 2024 – 2026 | Project Research Program Grant, IER Hitotsubashi University, \$7000. |
| 2022 – 2025 | Japanese Student Services Organization (JASSO) Graduate Student Fellowship. |
| 2022 | 17th Applied Econometrics Conference, Best Paper Award. |
| 2020 | 15th Applied Econometrics Conference, Excellent Paper Award |
| 2020 – 2021 | 2021 Annual iHEA Student Paper Prize, Second Prize. |
| 2020 – 2021 | Japan Center for Economic Research, Co-investigator, \$9000. |
| 2019 – 2021 | Scholarship from Bai Xian Asia Institute. |
| 2015 – 2016 | Scholarship from Li Ka Shing Foundation. |

Presentations

- 2026–27: ASSA Annual Meeting (D.C.); NBER Japan Project Meeting; Camp Resources; UC Berkeley (EERE)
- 2025–26: Institutional Barriers to Climate Adaptation (Stanford); LSE Environmental Camp (LSE); IPWSD (Columbia); UC Berkeley (EERE)
- 2021–24: AERE Annual Conference; JADE-JTREE Workshop (GRIPS); Osaka; SWET; Tsukuba; Occasional Workshop (UCSB); UC Berkeley (EERE)

Services

Referee Service: *American Economic Journal: Economic Policy, Journal of Environmental Economics and Management, Journal of Health Economics, Journal of Economic Behavior & Organization, China Economic Review, Economic Inquiry, Economic Modelling, Nature Climate Change, Scientific Reports*

Workshop Organizing: Student Organizer, EERE Workshop, UC Berkeley, 2024–25

Teaching Experience

- UC Berkeley: GSIs for Environmental Economics, Intermediate Microeconomics (Undergrad)
- HKUST: TAs for Research Methods in Social Science, Environmental Economics (Undergrad)

Professional Employment

- 2016 – 2018 Consultant, CSR Unit, Deloitte Consulting, Tokyo, Japan.