

Deyu Rao

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6072 LSK Business Building, Department of Economics
HKUST, Clear Water Bay, Hong Kong SAR

Academic Appointment

Assistant Professor, [Department of Economics](#), Hong Kong University of Science and Technology

HONG KONG SAR, *July 2022 -*

Faculty Associate, [Center for Economic Policy](#), Hong Kong University of Science and Technology

HONG KONG SAR, *October 2022 -*

Faculty Associate, [Institute for Emerging Market Studies](#), Hong Kong University of Science and Technology

HONG KONG SAR, *September 2024 -*

Cross-Campus Faculty Affiliate, Hong Kong University of Science and Technology (Guangzhou)

GUANGZHOU, *October 2023 -*

Education

Ph.D., Applied Economics and Management , Cornell University	ITHACA, 2022
M.Sc., Applied Economics and Management , Cornell University	ITHACA, 2017
B.Econ. with Distinction, Energy Economics, Renmin University of China	BEIJING, 2015
Visiting Student, Department of Economics , University of Warwick	COVENTRY, 2013
B.A., English Language and Literature, Renmin University of China	BEIJING, 2015

Research and Teaching Interests

Environmental Economics, Urban Economics, Applied Microeconomics

Research

Publications

Research Papers:

Panle Jia Barwick, Shanjun Li **Deyu Rao**, and Nahim Bin Zahur. [The Healthcare Cost of Air Pollution: Evidence from the Worlds Largest Payment Network](#). *Review of Economics and Statistics*, 106(1), 2024: 1-52. DOI: 10.1162/rest_a_01430.

Shipei Zeng and **Deyu Rao**. [Random Forests with Economic Roots: Explaining Machine Learning in Hedonic Imputation](#). *Computational Economics*, 63(2), 2024: 125. DOI: 10.1007/s10614-024-10798-9.

Book Chapters:

Chapter 1, *Trends in and Causes of Global Freshwater Decline*, and
Chapter 2, *Cascading Effects: The Impact of Continental Drying on People, Food, and the Planet*, in
Fan Zhang, Christian Borja-Vega, Hrishikesh Arvind Chandapurkar, James Famiglietti, Rick Hogeboom,
Regassa Namara, Zarif Rasul, Pavel Luengas-Sierra, and **Deyu Rao**. 2025. [Continental Drying: A Threat to Our Common Future](#). *Global Water Monitoring*. Washington, DC: World Bank. DOI: 10.1596/978-1-4648-2269-8.

Working Papers

Deyu Rao. [The Role of Environmental Amenities in the Urban Economy: Evidence from a Spatial General Equilibrium Approach](#). 2023. Under review.

Panle Jia Barwick, Dave Donaldson, Shanjun Li, Yatang Lin, and **Deyu Rao**. [Transportation Networks, Short-term Mobility, and Pollution Exposure: Evidence from High-Speed Rail in China](#). NBER Working Paper No. 30462, 2024. Reject and resubmit, *AER: Insight*.

Deyu Rao, Shanjun Li, Ivan Rudik, and Fan Zhang. [Water Woes in a Woven World: The Economic and Trade Impacts of Water Stress](#). 2024.

Wangyang Lai, Shanjun Li, **Deyu Rao**, Yongfan Zhao, and Fan Zhang. The Impact of Water Resources on Trade under a Changing Climate. 2024.

Work-in-Progress

Deyu Rao, Yuta Suzuki, Sifan Xue, and Yun Liu. Trade War 'Winners' Revisited: Environmental Consequences of Manufacturing Relocation.

Deyu Rao and Yiyuan Zhou. Bridging Divides: The Influence of Urban Transportation on Economic Equity.

Deyu Rao, Mengwei Lin, and Zeyu Chen. Local Governance and Environmental Regulation: Evidence from China's Urbanization.

Yan Zhang, Shiyu Wang, and **Deyu Rao**. Do Local Government Officials Tunnel Public Goods to Corporations in China? Evidence from Subway Land Auctions.

Zhengyuan Wu, **Deyu Rao**, and Shanjun Li. Quantifying the Impact of COVID-19 on Economic Activities Through Air Pollution.

Nahim Bin Zahur and **Deyu Rao**. Traffic Congestion and Consumer Spending.

Fellowships, Grants, and Honors

PI, General Research Fund (GRF), Hong Kong Research Grants Council	<i>July 2025 - June 2028</i>
HK\$827,500, "Bridging Divides: The Influence of Urban Transport'n on Economic Equity", Co-I: Yiyuan Zhou	
PI, Early Career Scheme (ECS), Hong Kong Research Grants Council	<i>Jan 2024 - Dec 2025</i>
HK\$535,443, "Local Governance and Environmental Regulation: Evidence from China's Urbanization"	
PI, Research Grant from Li & Fung Supply Chain Institute	<i>Sep 2025 - Aug 2027</i>
HK\$80,000, Co-I's: Yuta Suzuki and Sifan Xue	
PI, Research Grant from Institute for Emerging Market Studies (IEMS)	<i>June 2025 - May 2027</i>
HK\$80,000, Co-I's: Yuta Suzuki and Sifan Xue	

Teaching Experience Evaluation [Enrollment]

	2023SP	2024SP	2024FA	2025SU	2026SP
ECON 2103 Principles of Microeconomics		4.0 [57]	4.6+[50]		*
ECON 4454 ¹ Green Economy and Sustainability	4.4+[31]	4.6 [17]	4.6+[52]		*
ECON 5670 ² Urban Economics	4.8 [11]	4.9+[46]		5.0+[30]	*

¹Previously ECON 4999X ²Previously ECON 6100Q *Scheduled +Recognition of Excellent Teaching Performance

Professional Activities * scheduled

Invited Seminars and Conference Presentation:

2025: Tsinghua SEM, Duke Kunshan University, HKUST(GZ)

2024: SUFE, AERE Summer, RUSE Nanjing, HKU Beijing & Tsinghua CIDE

2023: ASSA-AREUEA, HKUST CEP, SJTU Antai, PKU, Jinan IESR

2022: HKUST, HKU, NUS, ICCDS, AsRES-AREUEA Joint Conf., UEA 16th Meeting, TWEEDS

2021: Cornell, Renmin U, NTU-CEC Joint Online Workshop

2017-2020: Cornell (CICER & EMI Research Day, AEP, SEERE, Emerging Markets PhD Research Day), NBER Spring Meeting 2017

Discussant:

2023: SUFE Workshop

2022: ICCDS 2022, AsRES-AREUEA Joint Conference, UEA 16th Meeting

Professional Services

Referee:

Journal of the European Economic Association, Journal of the Association of Environmental and Resource Economists, Journal of Environmental Economics and Management, Journal of Economic Behavior and Organization, Journal of Applied Econometrics, Environmental and Resource Economics, China Economic Review, Journal of Transport Economics and Policy, Energy Journal

Research Committee, UG Committee, Honor Thesis Reviewer, etc., Dept. of Economics, HKUST 2023 -

Part-time Consultant, World Bank Group 2022 - 2025

Judging Panel Member, Sustainable Smart Campus (SSC) Student Competition, HKUST 2023

Judging Panel Member, Hong Kong Economic Policy Challenge (HKEPC) 2025

Seminar Committee, Graduate Student Assembly (GSA) of AEM, Cornell University 2018-2019

Selected Press Coverage

[World Annual Fresh Water Losses Could Supply 280 Million People](#), World Bank, Nov 2025.

[High-Speed Rail Enables Chinese to Avoid Unhealthy Environ](#)s, NBER Digest, Jan 2023.

[How Smog Affects Spending in China](#), The Economist, June 2018.

The Impact of Air Pollution on Healthcare Spending in China, etc., in [VoxDev](#) (Apr 2019), [VoxEU](#) (Sept 2018), [VoxChina](#) (Aug 2017), [Cornell Econ News](#) (Aug 2018).

Others: [ChinaFund](#) (Jan 2024) on ESG Standards.

Previous Teaching and Research Experience

Best Ph.D. Dissertation Award, Dyson School of Applied Economics and Management, Cornell University 2023

Outstanding Graduate Teaching Assistant, College of Agriculture and Life Sciences, Cornell University 2021

Graduate Fellowship, Summer Graduate Research Assistantship, Cornell University 2017-2021

Scholarship for Academic Excellence, Sports Excellence, Graduate with Distinction, Renmin U of China 2012-2015

Teaching Assistant

[Econometrics](#), AEM 7100 (PhD level), Prof. Shanjun Li Spring 2020, 2021, 2022

[Investments](#), AEM 4670 (UG level), Prof. Sumudu Watugala Fall 2019, 2020

CICER Summer Camp ([Market Simulation](#), Marketing, Behavioral Economics) 2019-2021

Research Assistant

Prof. Shanjun Li, Cornell University ITHACA, 2016, 2018, 2021

Cornell Institute for China Economic Research (CICER) ITHACA, SHANGHAI & BEIJING, 2016

Cornell Institute for Social and Economic Research (CISER) ITHACA, 2016

Prof. Ping Qin, Renmin University of China BEIJING, 2014, 2015

Other Experience

Data Analyst Intern, [J. D. Power and Associates](#) BEIJING, 2014

Field Surveyor, [Chinese Residential Energy Consumption Survey](#) BEIJING & JINING, 2012-2013

Level II Football Referee, Chinese Football Association BEIJING, 2012-2015

HKUST Mainland Students and Scholars Society (MSSS) Soccer Team HONG KONG, 2022 -

Software Skills

Programming: STATA, MATLAB, ArcGIS, Python, R, SAS, SPSS, ORACLE, MS SQL

Language: Mandarin Chinese (native), English (fluent), Latin (basic)

Student and RA Placements

Arizona State University, WashU St. Louis, HKUST Guangzhou, Imperial College, Georgia Tech, HKMA