Shuo Li 李硕

CONTACT INFORMATION
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EDUCATION
Ph.D., Economics, Peking University, 2022 (Supervisors: Prof. Jintao Xu and Prof. Min Wang)
B.A., Economics, Shandong University, 2017
B.S., Mathematics (minor), Shandong University, 2017

PROFESSIONAL EXPERIENCE
CURRENT ACADEMIC POSITIONS

Aug 2022 –	Post-doctoral Fellow, Faculty of Business and Economics, The University of Hong Kong (Supervisor: Prof. Guojun He)

PREVIOUS ACADEMIC POSITIONS

Sept 2020 – Jun 2021	Short-term Consultant, World Bank (Supervisor: Prof. Marcin Piatkowski)
Feb 2020 – Jan 2021	Postgraduate Fellow, School of Public Health, Yale University (Supervisor: Prof. Xi Chen)
Sept 2016 – Jul 2017	Pre-doctoral Fellow, Environmental Research Center, Duke Kunshan University (Supervisor: Prof. Junjie Zhang)
Jul 2017 – Oct 2017	(Remote) Research Assistant, The Hong Kong Polytechnic University (Supervisor: Prof. Peng Zhang)

FIELDS OF INTEREST
Environmental Economics (environmental policy; climate change; water pollution; air pollution; green finance)
Health Economics (environmental health; nutrition; health policy)
Development Economics (aid; human capital)

FELLOWSHIPS AND AWARDS
(Inaugural) Best Doctoral Dissertation Award, The 3rd Annual Conference of the Chinese Association of Environmental and Resource Economists, 2024
Excellent Paper Award, The 8th Annual Meeting of the China Labor Economists Forum, 2024
Excellent Paper Award, The 6th China Health Economic Development Forum, 2023
CES Best Student Paper Award, Chinese Economist Society, 2022
Excellent Research Award, Peking University, 2019
School Excellent Teaching Assistant Award, Peking University, 2018
Outstanding Graduate of Shandong Province, Shandong University, 2017
National Scholarship, Shandong University, 2014 & 2015

WORKING PAPERS
Economics Papers
1. "Climate Risks and The Performance of Chinese-Listed Companies" (with Guojun He)
   Job Market Paper (under revision)
   Abstract: This paper investigates the impact of physical climate risks on the performance of publicly listed companies in China over nearly two decades. We collect comprehensive climate risk data from multiple sources, including extreme high and low temperatures, droughts, floods, and typhoons, and incorporate various forms of physical climate risks into our analysis. Employing a two-way fixed effects model for company-by-year panel data, we analyze the effects of these risks on company profitability, measured by Return on Assets (ROA). Our findings indicate that the exposure of subsidiaries to climate risks has a significantly negative impact on profitability, while the exposure of headquarters is inconsequential. We also examine the adaptation strategies employed by companies in response to

climate risks and find that aggregate-level adaptation outperforms firm-specific counterparts in China. The paper further investigates the stock market's reaction to physical climate risks and reveals that the stock market has scarcely accounted for the impacts of these risks in comparison to the measure of accounting profitability. Our study contributes to the climate finance literature by providing evidence of the effects of physical climate risks on company performance in China and highlighting the importance of considering subsidiaries' climate risks and adaptation strategies.

2. "Environmental Regulation and Firms' Extensive Margin Decisions" (with Min Wang)
R&R at ***Journal of Environmental Economics and Management***
Abstract: The paper explores the impacts of environmental regulation on Chinese firms' extensive margin decisions and consequent changes in the market structure of regulated industries. Although environmental regulation deters firm entry and increases firm exit, it asymmetrically targets entrants more than incumbents. Through the market selection mechanism, large and private entrants are less inclined to enter the market in response to regulation, while small incumbents are more likely to exit. We finally examine whether incumbents in regulated cities adjust their inter-city investments to non-regulated cities and find no significant results, alleviating concerns regarding the regulation's spatial spillover effects.

3. "Gone with the Aid: How Paired Assistance Program Affects High-Stakes College Choices" (with Le Kang, Qinrui Xiahou and Peng Zhang)
Under review at ***Journal of Development Economics***
Abstract: As the world contends with persistent poverty and losses from natural disasters, the provision of aid becomes increasingly vital. However, the empirical examination of the mutual benefits of aid is complicated due to endogeneity concerns. This paper provides a novel perspective on the unintended consequences of aid by exploring a post-earthquake reconstruction program in China. Leveraging the quasi-random pair assignment, we find a 40% increase in students from aided counties choosing universities in donor provinces, with stronger responses from high-achieving and engineering students. Besides, attending universities in donor provinces can increase students' likelihood of migrating to these provinces and lifetime earnings by 26.43%. This paper underscores the potential benefits of aid for both providers and recipients: providers can attract skilled individuals and garner affinity from aided regions, and recipients can experience lifelong benefits.

4. "Excess Mortality During China's COVID Exit Wave: Evidence Based on Social Elites" (with Guojun He and Yucheng Quan)
Under review at ***Journal of Population Economics***
Abstract: China experienced a nationwide transmission of COVID-19 after the government abandoned its stringent zero-COVID policy in December 2022. Based on a manually collected dataset of elite deaths in China, this paper presents the first ex-post estimate of excess mortality during China's COVID exit wave. We find a significant increase in excess mortality in late 2022 and early 2023, with the peak weekly excess mortality for those above age 65 increasing by over 10-fold. However, the elevated mortality returned to the pre-pandemic level in four to five weeks. We further estimate that there were at least 1.44 million during China's COVID pandemic, driven mostly by the exit wave. Nevertheless, China's total mortality cost during the pandemic remains low relative to comparable countries, because COVID-19 was under control most of the time from 2020 to 2022. We provide a case study showing how to use elite information to infer population excess mortality.

5. "Environmental Health Benefits of Public Infrastructure: Evidence from Tap Water and Water Pollution in China" (with Jintao Xu and Ding Ma)
Abstract: Based on data from the China Health and Nutrition Survey and Surface Water Quality Weekly Report, we estimate the effects of water pollution, tap water, and their interaction on individual health status. Using the panel IV regression method, we find that water pollution significantly increases the morbidity rate, while ignoring the different levels of pollution exposure caused by the use of tap water may lead to a serious underestimate of the impact of water pollution. Regression results show that tap water can offset about 60% of the negative health effects of water pollution, and the non-offsetting part may come from pollutants that cannot be eliminated by treatment processes in waterworks. Further analysis finds that the long-term health benefits of tap water are one order of magnitude higher than the short-term health benefits, suggesting that sustained water quality improvement has a long-term impact on health.

Finally, comparing the disease cost and the total health cost caused by water pollution, we find that nearly 2/3 of the health cost can be attributed to the disease cost. As one of the most important infrastructure investments, the adoption of tap water greatly eliminates the negative impact of water pollution on the health of Chinese residents. This has important general implications for low-income countries with a low proportion of tap water supply.

6. "Climate Change and The Spatial Distribution of Industries" (with Ding Ma, Min Wang and Xiumei Yu)
Abstract: This paper explores the impacts of long-term temperature changes on the spatial distribution of industries, focusing on temperature effects on firm entry and exit. Using the information on all firms registered in China, we find a robust inverted U-shaped relationship between temperature change and firm entry and a significant relationship between high temperature and firm exit. This result indicates that extreme cold or hot temperatures reduce firm entry and increase firm exit. The effects are more significant for large firms and differ across sectors. In response to extreme temperatures, firms may migrate across regions through inter-regional equity investments to create new firms. The long-run projection shows that climate change may significantly reshape the spatial distribution of industries.

Multi-disciplinary Papers

7. "Optimal Design in China's Pollution Abatement Target" (with Guojun He and Fangyuan Peng)
Abstract: Addressing air pollution is a critical challenge. Traditional air pollution regulations chiefly focus on areas with the highest pollution levels. However, the regions with the most significant pollution levels may not always be the primary contributors to nationwide pollution due to the long-distance transport of air pollutants. This paper uses high-frequency backward trajectory data to examine the spillover effects of PM2.5 pollution in China from 2015 to 2023. The city-pair regression demonstrates a statistically significant positive association between the pollution levels in source and destination cities. Notably, the geographic distribution of air pollution spillover impact substantially diverges from the pattern of PM2.5 concentration, highlighting a discrepancy between local air pollution levels and their national contributions. This study further shows that China's past city-level PM2.5 reduction targets were mainly based on PM2.5 concentration rather than the local air pollution's contribution to national levels, indicating a potential loss in efficiency. Finally, the paper suggests an alternative pollution reduction target allocation strategy that considers spillover effects. The findings imply that China has disproportionately concentrated on the most polluted cities while under-responding to many less-polluted cities with significant spillover impacts.

8. "Extreme Temperatures Lead to Unhealthy Nutrient Intake" (with Xi Chen, Ding Ma and Jintao Xu)
Abstract: Climate change-induced extreme temperatures threaten agriculture and exacerbate global food insecurity. While the temperature effects on food supply are well-known, we provide the first evidence of short-term fluctuations in extreme temperatures influencing food consumption and nutrition intake in China over two decades. The fixed effect models demonstrate that extreme heat reduces carbohydrate and protein intake without affecting fat consumption, whereas cold weather increases all of them and has a largest effect on fat consumption. Vegetable consumption significantly decreases during extreme heat, while dried legume intake notably increases during extreme cold. In contrast, cereal consumption peaks on hot days and declines on cold days. This paper reveals that air conditioners, fans, and heating systems effectively mitigate the impact of temperature extremes, while refrigerators offer minimal benefits. Thus, biological appetite, rather than food accessibility, primarily drives nutrient intake during extreme temperatures. Besides, rural, low-income, male, and child populations exhibit lower vulnerability. Our study suggests climate change may highly decrease the intake of carbohydrate and protein, but not in the same proportion as fat, offering a novel perspective on the temperature-health nexus.

9. "Aquatic Product Intake and The Incidence of Chronic Diseases" (with Jintao Xu)
Abstract: This paper employs a Cox proportional hazard model to examine the impact of aquatic product consumption on the risk of four noncommunicable diseases (NCDs) in China, including hypertension, diabetes, heart attack, and stroke. Since the effect of food consumption on health outcomes may be nonlinear, this paper utilizes a nonparametric binned approach to encapsulate the nonlinear effect of aquatic product consumption, exploring the optimal level of intake. Our findings suggest that, compared to no aquatic product intake, consuming less than 100 g/week of aquatic products significantly diminishes the risk of most NCDs. However, we did not find substantial evidence supporting the recommended amount (280-525 g per week) of aquatic product consumption suggested by the Chinese dietary guidelines. This paper has significant implications for diet and nutrition policies.

10. "Temperature-Dissolved Oxygen Relationship Challenges Water Quality Management Under Climate Change" (with Ding Ma and Jintao Xu)
    Abstract: Climate change significantly affects various pollution issues, including water quality. This paper explores the influence of temperature on water pollution indicators using a dataset from almost 150 water monitoring stations in China from 2004 to 2017. The study reveals a dominant correlation between dissolved oxygen concentration and air temperature, significantly affecting the seasonal patterns of water pollution indicators. The paper further highlights the potential bias in water quality assessments due to this temperature-dissolved oxygen relationship, leading to the overestimation of water toxicity in hot environments. The study recommends revising water quality standards to account for this correlation and suggests using dissolved oxygen saturation or concentration as indicators based on the purpose of the water source. The research underscores the crucial role of climate change in water quality management and has significant implications for sustainable development goals, emphasizing the need for integrated solutions. This paper contributes to understanding climate change's impact on water quality and offers valuable insights for policymakers and environmental conservation efforts.

PUBLICATION IN CHINESE

11. "Mandate-based and Market-based Policies: Comparative Analyses on Carbon Mitigation Effectiveness of China's Climate Policies" (with Pengsheng Lin), The Journal of World Economy, 2024,47(6):149-175.
    林鹏昇,李硕（通讯作者）. 行政手段与市场机制: 中国气候政策碳减排效果的比较[J]. 世界经济,2024, 47(6):149-175.

12. "Effects of improved air quality on household consumption: empirical evidence from China Family Panel Studies" (with Min Wang), China Population, Resources and Environment, 2023,33(10):24-34.
    李硕,王敏（通讯作者）.空气质量改善对居民消费的影响[J].中国人口·资源与环境,2023,33(10):24-34.

13. "Trends in China's surface water quality and control policy solutions" (with Ding Ma), China Population, Resources and Environment, 2023,33(05):27-39.
    马丁,李硕（通讯作者）.中国地表水水质变化趋势及治理政策应对[J].中国人口·资源与环境,2023,33(05):27-39.

14. "Environmental Inspection and Firm Entry: Evidence from Firm Registration Data" (with Min Wang and Dandan Zhang), The Journal of World Economy, 2022,45(01):110-132.
    李硕,王敏,张丹丹（通讯作者）.中央环保督察和企业进入:来自企业注册数据的证据[J].世界经济,2022,45(01):110-132.

REFEREE SERVICES

Journal of Environmental Economics and Management
China Economic Review (4)
China Economic Quarterly International
经济学（季刊）/ China Economic Quarterly (20+)
世界经济 / The Journal of World Economy

FUNDING

1. Team member, Unravelling the Black Box between Air Pollution and Public Health for Transformative Air Quality Management, UGC Theme-based Research Scheme at Hong Kong, 2022-2026, PI: Prof. Guojun He
2. Team member, Developing Hong Kong as a Global Green Finance Centre, UGC Theme-based Research Scheme at Hong Kong, 2021-2025, PI: Prof. Guojun He
3. Team member, Sustainable Management of Oceans and Marine Resources, Environment for Development, 2018-2021, PI: Prof. Jintao Xu
4. Team member, Evaluating the Economic Impact of Doing Business Reforms in China: Methodological Approaches to Measuring the Results of 2018-19 DB Reforms in Beijing and Shanghai, World Bank, 2020-2021, Supervisor: Marcin Piatkowski and Sylvia Solf
5. Team member, The impact of air pollution, climate change and environmental policies on my country's industrial

structure transformation and cross-regional enterprise mobility, National Natural Science Foundation of China, 2020-2023, PI: Prof. Min Wang

TEACHING EXPERIENCE

The University of Hong Kong:
TA to Prof. Guojun He, Applied Econometrics (Ph.D. core), Spring 2023, Spring 2024

Peking University:
TA to Prof. Jintao Xu, Frontiers of Economic Research and Methodology (Ph.D. & UG), Fall 2019
TA to Prof. Yan Shen, Advanced Econometrics II (Ph.D. core), Spring 2019
TA to Dr. Gao Xu, Seminar of Chinese Economy (UG), Fall 2018

Others:
TA to Prof. Junjie Zhang, Chinese Environmental Policy (UG@Duke Kunshan), 2017
Mentor, Home and Youth Affairs Bureau: YDC Youth Ambassadors, 2024
Coordinator, NSD Energy and Climate Change Economics Workshop at PKU, 2019 & 2021

PRESENTATIONS

2024
China Economics Annual Conference (Peking University)
The 4th Frontiers Forum on Environmental Economics (The University of Hong Kong and Tsinghua University)
The 5th Workshop on Resource Security and Economic Sciences (Xiamen University)
HKU Econ Brownbag (The University of Hong Kong)

2023
SUFE Workshop on the Frontiers of Resource and Environmental Economics (Shanghai University of Finance and Economics)
The 6th China Health Economic Development Forum (Wuhan University)
The 2nd International Symposium on Frontiers of Environmental and Health Economics (Nanjing University)

2022
Asian Meeting of the Econometric Society (AMES) in China (CUHK-Shenzhen, online)
Chinese Economists Society (CES) Annual Conference (Guizhou University, online)
The 1st Chinese Economics Frontier Symposium: Economics of Sustainable Development (Nanjing University)

2021
China Economics Annual Conference (Shaanxi Normal University)
PKU Energy and Climate Change Economics Workshop (Peking University)

2020
Agricultural & Applied Economics Association (AAEA) China Section (online)

2019
China Economics Annual Conference (Nankai University),
PKU Energy and Climate Change Economics Workshop (Peking University)

REFERENCES

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