

ZHITAO ZHU

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EDUCATION

Ph.D., Economics, The Chinese University of Hong Kong	2017-2023 (anticipated)
M.A., Economics, Fudan University	2014-2017
B.A., Economics, Fudan University	2010-2014

RESEARCH INTERESTS

Macro Development, Trade and Spatial Economics, Big Data and Chinese Economy

JOB MARKET PAPER

On (Un)Congested Roads: A Quantitative Analysis of Infrastructure Investment Efficiency using Truck GPS Data, with Simon Alder and Zheng (Michael) Song, 2022

Abstract: This paper aims to quantify the gain from investments in a transportation network where the elasticity of driving time to traffic (“the congestion elasticity”) may differ across roads. We first use high-frequency GPS data from half a million Chinese trucks to uncover the congestion elasticity heterogeneity in China’s city-to-city road links. We find that one third of the links are uncongested and no more than 40% are associated with a large congestion elasticity comparable to the recent estimates for the developed economies. In contrast, using similar real-time traffic data for inter-region highways in England, we find that almost all the roads are associated with a large congestion elasticity. We next incorporate the congestion elasticity heterogeneity into a general equilibrium trade model with optimal route choices developed by Allen and Arkolakis (2019) and structurally estimate the model. To calculate the returns to investment in each link, we infer the benefit from the estimated model and calculate the construction cost and the opportunity cost of land directly from the data. We find the returns to be highly unequal in China and the heterogeneity in the congestion elasticity can account for more than half of the dispersion. Numerical simulations show that the dispersion is a robust indicator of misallocation, and optimized investments with a reasonable budget generate sizable welfare gains. Moreover, the optimal investment allocation turns out to be orthogonal to the actual allocation in the most developed provinces. Our findings suggest a severe misallocation of road investments in China.

PUBLICATIONS

Chasing or Cheating? Theory and Evidence on China's GDP Manipulation, with Shuo Chen, and Xue Qiao, *Journal of Economic Behavior and Organization*, 2021, 189, 657-671.

Gone with the Wind? Emissions of Neighboring Coal-Fired Power Plants and Local Public Health in China, with Shuo Chen, Yiran Li, and Guang Shi, *China Economic Review*, 2021, 69, 101660.

Running out of Steam? A Political Incentive Perspective of FDI Inflows in China, with Shuo Chen, Xiaowei Rose Luo, and Danqing Wang, *Journal of International Business Studies*, 2021, 52(4):692-717.

WORKING PAPER

Club-based Promotions in Organizations: Evidence and Theory, with Shuo Chen, and Xinyu Fan, 2022, submitted.

PRESENTATION

Forum of Public Economy and Policy, Fudan University Oct 2022

Applied Economics Brownbag, The Chinese University of Hong Kong Sep 2022

VISITING

School of Entrepreneurship and Management, ShanghaiTech University Nov 2019 - Jan 2020

PROFESSIONAL SERVICE

Referee for *Management Science*

TEACHING EXPERIENCES

The Chinese University of Hong Kong, Teaching Assistant

Analysis of China's Economy Fall 2022, 2021

China and Global Economy Spring 2022, 2021, 2020, 2018

Global and Regional Economic Integration Spring 2019

Development Economics Fall 2022, 2020, 2019, 2018, 2017

Fudan University, Teaching Assistant

Why Did Industrial Revolution Not Happen in China First? Spring 2017

Principles of Economics	Spring 2017, Spring & Fall 2016
Econometrics	Fall 2015
Contemporary Chinese Economy	Spring 2015

HONORS AND AWARDS

Postgraduate Studentship, The Chinese University of Hong Kong	2017-2021
Huawei Scholarship, Fudan University	2016
Outstanding Student Scholarship, Fudan University	2015

SKILLS

Software: MATLAB, Stata, R, Python, ArcGIS, LaTeX, LyX

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

REFERENCES

Zheng (Michael) Song (Supervisor)
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