

Research Statement

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I am broadly interested in spatial economics and development economics, with a particular focus on (i) the (unintended) spillover effects of public policies shaped by interactions among agents and (ii) the spatial impacts of institutional arrangements and transitions through quantitative spatial equilibrium models. I am particularly intrigued by how such forces influence development, innovation, environmental regulation, and welfare.

My first formal academic research experience was in the summer of 2020. After completing my second year of undergrad, I joined a research project led by Professors Liyuan Cui, Yanfen Huang, and Huayi Yu. The project focused on the "pollution boundary effect," which occurs when governments strategically transfer pollution across jurisdictions. We analyzed a 2017 initiative targeting 28 cities situated along the provincial boundaries within the Beijing-Tianjin-Hebei (BTH) region. Our findings revealed that while the policy aimed to reduce cross-boundary pollution within BTH, provincial governments, balancing environmental and economic interests, relocated polluting firms to areas outside the policy's coverage, exacerbating pollution at the uncovered boundaries. Our findings, finally published at the *Journal of Environmental Economics and Management* in 2024, highlighted the need for comprehensive regional policies to prevent unintended redistribution.

This research experience also inspired me to explore the interactions, games, and cooperation among interregional agents. China's vast territory has long been characterized by regional segmentation (Young, 2000; Poncet, 2005); in recent years, China's central government has actively promoted the construction of the "national unified market." Before delving deeper into this topic, I wanted to understand the normative rationale behind it. In 2021, I joined a research project with Prof. Xin Fan, who later became my master's supervisor. In this project, I was responsible for reorganizing and analyzing panel survey data and drafting preliminary findings. We examined the relationship between market integration and subjective well-being, focusing on the institutional roots of market segmentation. Our research found a positive correlation between market integration and resident-reported well-being, particularly among lower-income populations, suggesting that market integration could reduce welfare inequality. This work was published at the *Journal of Happiness Studies* in 2023.

My bachelor's thesis advanced my journey by investigating how an inter-city negotiation system fosters regional cooperation and its spatial impacts. I used the gradual promotion of this system as a quasi-experiment and employed newly developed methods for staggered DD, finding that the system promotes population agglomeration and income convergence among cities. I then incorporated these estimates into a quantitative spatial equilibrium (QSE) model to assess its welfare implications. In 2023, I was invited to present my work at the 21st China Youth Economists Forum, one of the most influential economics forums in China.

Since starting my master's, I have increasingly appreciated the value of combining reduced-form analyses with spatial structural models, particularly for institutional changes and place-based policies, where spillovers are more complex than simple distance-dependent effects. To deepen my understanding, I replicated several influential QSE papers like Caliendo and Parro (2015) and Tombe and Zhu (2019). Building on TZ2019, I developed a model that incorporates imperfect rural land ownership and targeted urban construction land allocation to analyze how China's land titling reform incentivizes rural-urban migration. My model, unlike TZ2019, highlighted welfare losses for urban residents and simulated optimal urban land allocation to achieve spatial Pareto improvement. I presented this research at the 1st Economic Thought Theory and Practice Forum, where I received the "Outstanding Paper" distinction.

In the past several years, I engaged in a cooperative research project between RUC and the Cambridge Group for the History of Population and Social Structure. This project sits at the intersection of economic history, economic development, and spatial economics. Our team has manually collected and extracted individual-level data from Qing Dynasty homicide case reports archived in The First Historical Archives of China. Using this data, we reconstructed migration patterns from that period to gain insights into the China-Europe Great Divergence. In one of the papers I contributed to, we explore the broader implications of this new dataset. I assisted with data processing and visualizing key stylized facts. The paper is currently under review at *Demography*.

In another recently completed paper, I led the modeling and empirical components, designing a structural model and conducting empirical analysis. We estimate a structural gravity model to provide the first systematic evaluation of how administrative boundaries affected labor migration during the Qing Dynasty. Our findings show that the boundaries of *Zongdu Xiaqu*—an administrative division higher than the province—significantly hindered cross-*xiaqu* migration. However, provincial boundaries within a *xiaqu* had negligible effects. These results suggest a labor market that was regionally integrated but nationally segmented, challenging previous claims—derived from studies of Qing-era grain markets—that China had achieved a high degree of national market integration historically. We suggest that such segmentation may have contributed to the Great Divergence.

There is another ongoing paper within this project that narrows the focus to examine the divergence of clan culture in Europe and China, where I am responsible for designing and implementing the empirical section. In Europe, large-scale migration following the Industrial Revolution promoted market integration and economic development, diminishing the role of clans. By contrast, despite extensive historical migration, clan culture continues to exert a strong influence in modern Chinese society. We explain this phenomenon by demonstrating that, during the Qing Dynasty, migration patterns were inversely shaped by clan structures, which reinforced the agglomeration of large families.

I recently completed an independent research paper building on my master's thesis. This paper examines the unintended consequences of selective R&D subsidy policies on aggregate innovation. By developing a Schumpeterian model, I argue that subsidizing "superstar" firms may discourage innovation by other incumbent firms while stifling creative destruction from new entrants. These dynamics could ultimately reduce aggregate national innovation output. I test these claims empirically by analyzing the effects of China's National Technology Innovation Demonstration Enterprise policy with large-scale patent data. Recently, this working paper was presented at the 50th Beijing Camphor Economic Circle (CEC) Seminar at Peking University, where it received the "Outstanding Paper" distinction.

Throughout these experiences, I have developed strong quantitative skills (especially in Python and Stata) and research writing abilities, and I remain committed to further strengthening these skills. More details about the studies mentioned above can be found on my personal website: <https://www.zeyuchen.top/research.html>, where I also provide code samples for some projects:
https://www.zeyuchen.top/research_pages/code_archive/code_archive.html.