

## Research Statement – Dongkyu Yang

I am an Assistant Professor of Economics studying development, international trade, and environmental economics from a historical perspective. A unifying theme of my dissertation is to understand the long-term consequences of historical events on macroeconomic development in the context of the 20th-century United States. I plan to extend my research to other countries' contexts.

My research focuses on how spatial linkages, which govern the movement of goods and people, influence economic development and the distribution of economic activity. Specifically, I aim to provide a better understanding of the role of migration and trade in structural transformation and regional development over the long run. Rather than being partial to specific tools, I focus on important theory-driven questions, and I have been working on both quantitative models and reduced-form empirical analysis. I briefly outline my research into two groups:

### 1. Macroeconomic Development and Economic History

In chapter one of my dissertation, *Time to Accumulate: The Great Migration and the Rise of the American South*, I empirically and quantitatively assess the role of the Second Great Migration (1940-1970), one of the largest labor reallocation episodes in the U.S. history, in the economic development of the American South between 1970 and 2010. Empirical analysis using shift-share instruments shows novel findings that out-migration incentivized physical capital investment and capital-augmenting technical change, increasing capital and output per worker in both agriculture and manufacturing for at least four decades. Structural change followed. In this paper, I highlight the role of labor scarcity in driving non-agricultural development and structural change in the American South that lost workers from out-migration, a topic that received relatively little attention in both migration and macroeconomics literature.

In the second chapter of my dissertation, *A General Equilibrium Investigation of the American Dust Bowl* (Revision requested at *Journal of Political Economy Microeconomics*), I examine the influences of a natural disaster on spillover effects and structural change by revisiting the 1930s American Dust Bowl. Specifically, I quantify the transmission of environmental shocks using a state-of-the-art, dynamic spatial model to provide a new assessment of the impact of the disaster on non-agricultural sectors and non-Great Plains region that was not a direct focus on the existing literature. I find that the local shock in agriculture was more than proportionally transmitted to the non-tradable sector, while the shock was muted in the tradable sector. I show that these asymmetric spillover effects were central in slowing down structural change into services in the Great Plains.

Similarly, a large-scale government policy can also affect the economy and the course of history. In the third chapter of my dissertation, *Did War Mobilization Cause Regional Development?*

(with Taylor Jaworski, Published in **Explorations in Economic History**), we produce new estimates for the impact of the United States' large-scale war mobilization on long-term economic growth and regional development in the postwar period. We then simulate an economic geography model using our preferred estimates. The results suggest the largest likely aggregate welfare impact at the national level was modest in the long run.

Related to the above projects, I am collaborating with a colleague at my current institution to examine how the inflow of Dust Bowl migrants shaped innovation dynamics in California. The number of new patents in California slowed during the 1930s, coinciding with the arrival of large numbers of Dust Bowl refugees from the Great Plains. This project investigates whether the sudden increase in low-cost, low-skilled labor reduced firms' incentives to invest in capital-intensive or innovation activities.

## **2. International Trade and Spatial Economics**

Throughout my thesis, I develop a model that incorporates factor substitution and factor abundance in a spatial framework with labor migration and capital investment. This framework builds on rapidly developing spatial economics literature and can be applied to other settings in which cross-industry differences in factor substitution may play an important role, such as responses to labor scarcity arising from decreasing birth rates or abrupt changes in migration policy.

In *Trade and Inequality: A Sufficient Statistics Approach* (with Sergey Nigai, Published in **Journal of Political Economy Macroeconomics**), we develop a sufficient statistics approach for calculating the effects of international trade on within-country income inequality. In a class of models where changes in within-sector inequality are generated via linear profit sharing between individuals and firms, observing changes in two statistics - bilateral trade flows and the share of exporters - is sufficient for measuring trade-induced changes in inequality. Our approach supplements existing sufficient statistics for the average welfare calculation developed by Arkolakis, Costinot, and Rodriguez-Clare on inequality. Our approach provides a quick and easy gauge for the inequality effects of trade openness, with a potential role in future policy analysis.

Going forward, I aim to apply the model with multiple factors of production to the economic development experience in Korea during its industrialization period (1967–2000). During the “growth miracle” period, the Korean economy has transformed from labor-intensive to capital-intensive production even at the firm level. Building on the tools I have already developed, I plan to assess the role of factor substitution at the firm/plant level data using Korea's annual Mining and Manufacturing Survey. The aim is to quantify the impacts of the government's subsidy on capital adoption during this period using a firm-level trade model.

## References

- Jaworski, Taylor and Dongkyu Yang**, “Did War Mobilization Cause Regional Development?,” *Revise and Resubmit at Explorations in Economic History*, 2024.
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