

## Research Statement – Dongkyu Yang

I am a PhD candidate working on issues in International Trade, History, and Macroeconomics. 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. I use a variety of theoretical and empirical tools in my research. Rather than being loyal to specific tools, I am loyal to questions, and I have been working on both quantitative models and reduced-form empirical analysis.

A unifying theme of my dissertation is an effort to understand the long-term consequences of historical events on economic development in the context of the 20th-century United States. In the future, I hope to extend my research to cover other countries as well. Here, I briefly outline my research which can be categorized into two groups, focusing on their contributions to the literature:

### **Economic history** (migration / structural change).

In my job market paper, 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) in the subsequent 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 at least until 2010. Structural change followed. In this paper, I highlight the role of labor scarcity in driving structural change and non-agriculture development in the origin that lost workers from out-migration, a topic that received relatively less attention.

In the second chapter of my dissertation, *A General Equilibrium Investigation of the American Dust Bowl* (Revision requested at the **Journal of Political Economy Microeconomics**), I examine the influences of a natural disaster on spillover effects and structural change, capitalizing on 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 the part of the economy 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 nontradable sector, while the tradable sector mitigated the shock. Such a disparity hindered structural change in the Great Plains.

Similarly, a large-scale government policy can also affect the economy and the course of history. The participation of the United States in World War II led to a substantial mobilization of domestic resources to produce war materials. In the third chapter of my dissertation, *Did War Mobilization Cause Regional Development?* (with Taylor Jaworski, Revision requested at the

**Explorations in Economic History** on a special issue), we produce new estimates for the impact of war mobilization on long-run economic growth and regional development in the United States over the postwar period. We then simulate an economic geography model using our preferred estimates. The quantitative results suggest the largest likely aggregate welfare impact at the national level was modest in the long run.

As a follow-up study to my job market paper, I am working with Paige Montrose, a PhD student at the University of Pittsburgh, in applying to access restricted-use data files (the Decennial Census between 1960 and 2010 and Numident) in Research Data Centers. In this work-in-progress project entitled *The Impacts of Great Migration on Southern Lives*, we are planning to track migrants and Southern stayers in the long run and compare labor market outcomes, health, and intergenerational mobility to assess the true value of the Great Migration on the migrants. After considering the negative spillover effects in the Northern destination and the positive spillover effects in the origin, we hypothesize that the true value of migration could have been much lower in the long run, compared to the initial difference between the South and the North might suggest.

### **Trade and spatial economics.**

In the final part of my job market paper, I develop a model that incorporates factor substitution and Hecksher-Ohlin forces in a spatial framework with labor migration and capital investment. This tool builds on rapidly developing spatial economics literature and can be applied to another setting where factor substitution and factor intensity are expected to play important roles.

In *Trade and Inequality: A Sufficient Statistics Approach* (with Sergey Nigai, published at the **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 only generated via linear profit sharing between individuals and firms, observing changes in two statistics - bilateral international 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 in Arkolakis et al. (2012) on inequality. It provides a quick and easy gauge for the inequality effects of trade openness, with a potential role in future policy analysis.

Related to the above two projects, I aim to apply the Melitz-type model with multiple factors to the economic development experience in Korea during its industrialization period (1967–2000). During the “growth miracle” period, the Korean economy has been transformed from labor-intensive to capital-intensive production. Related to my job market paper that focuses on the role of regional labor-capital substitution, 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 the firm-level trade model.

## References

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