Research Statement

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My research fields are international trade, the Chinese economy, and financial regulation. I focus my research on analyzing economic interactions over space, identifying and quantifying their driving forces, and deriving policy implications. I use both quantitative (international trade and macroeconomic models) and empirical (micro-econometrics and time series) methods to analyze relevant topics.

Specifically, in my job market paper, 'The Decline in China's Trade Share of GDP: A Structural Accounting', I develop and calibrate a multi-sector, multi-region trade model to explain China's trade share of GDP through structural accounting. The model allows for inter-regional-sectoral trade and inter-regional labor mobility within China and features three main types of time-varying and region-sector specific wedges: total factor productivity (TFP) wedges, trade cost wedges, and labor mobility wedges. The comparative advantage (CA) and specialization are the main parts of the story. As China's TFP increases, all else being equal, because of CA forces, China produces more varieties, and its share of total spending on domestic goods will increase; hence, the import share will decline. As labor net outflows increase or labor supply decreases, regions with less labor do not need to specialize in too many goods to be able to consume the goods they need. The region will specialize in fewer varieties (right tail of the distribution), thus the trade share increases. I find that during the period 2002-2007, declining international trade costs in the heavy industry and TFP growth in foreign regions are the two dominant forces driving the increase in China's trade share of GDP. The TFP growth in China's regions is equally important, but it exerts its effects in an inverse direction, leading to a decrease in China's trade share. During the period 2007-2015, China's TFP growth is the dominant force behind the decrease in its trade share of GDP. At the sector level, during both periods, changes in TFP within the heavy industry sector play a crucial role in explaining the change in China's trade share of GDP. Moreover, through input-output linkages, changes in TFP within the services sector hold the same level of importance as changes within the heavy industry sector.

In my more recent work, 'Demographics, Trade, and Growth', I study how changes in demographic structure lead to changes in comparative advantage (CA) and reallocate production across regions and sectors, which ultimately influence economic growth. Both the Ricardian CA and the Hecksher-Ohlin CA are taken into consideration. I start with panel regression and the VARX model, showing the relationship between demographics and variables such as TFP growth and the growth rate of capital-labor ratio. I then develop an overlapping generations (OLG) trade model that integrates the empirical characteristics identified in empirical sections. This model adapts the Eaton-

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Kortum framework to include OLG features, thereby capturing the influence of demographic structures on dynamic capital accumulation and facilitating interaction between these forces and trade. I further enhance the model in two key aspects: First, the age distribution is incorporated as a determinant of total factor productivity (TFP) growth, recognizing that individuals of different ages possess varying capacities for generating new ideas. Second, I extend the Eaton-Kortum model by introducing a multi-sector setup, implicitly integrating both Heckscher-Ohlin and Ricardian comparative advantage forces. Utilizing the calibrated model, I will quantitatively demonstrate how demographics have influenced trade and growth in China historically and conduct model-based projections for the future.

Besides the quantitative methods, I am also skilled in common empirical methods. In the joint work with Kunyao Xu, we use a regression discontinuity method to identify the impact of consumer expectations on actual spending during COVID-19. The breakpoint used to identify the causal relations is the date of Pfizer's vaccine announcement, which acts as an exogenous factor with respect to spending. In the joint work with Alice Ouyang, we study how Chinese banks respond to different kinds of macro-prudential regulations. We build a simultaneous equations model to examine the interrelationships among banks' capital requirements, liquidity requirements, and capital quality, and how these three factors influence a bank's profitability and risk exposure.

I have also initiated a new project that builds on my previous research. The high quality of China's city-level IO table enables research on topics relevant to internal trade within China. In one project, 'Accounting for China's Province-Level Border Effects,' I study whether inter-city trade across the province border generates extra trade costs for city pairs with similar characteristics and identify the factors (such as the share of state-owned enterprises and local government tax policy) that contribute to these additional costs. Quantitative methods will be used to quantify the effects of these border-induced trade costs on welfare and equality across China's regions.

In future work, I plan to continue my ongoing research. I am also interested in collaborating on any topics relevant to my research fields and using both theoretical and empirical approaches with applications in developed or developing countries.