The Transition from Small to Large Farms in Developing Economies: A Welfare Analysis

Meilin Ma
Department of Agricultural Economics
Purdue University
mameilin@purdue.edu

Jessie Lin
Department of Agricultural Economics and Rural Development
University of Göttingen

Richard J. Sexton
Department of Agricultural & Resource Economics
University of California, Davis

Abstract: Promoting smallholder production systems as a growth and poverty-reduction strategy versus supporting an institutional framework that enables endogenous and voluntary consolidation of smallholder farms into larger operations is a central debate for economic development and food security in low- and middle-income countries. We propose an integrated conceptual framework to compare the two alternative farming systems for producing a domestic staple commodity, focusing on key economic factors that differentiate them, including labor inefficiency of larger farms, credit constraints for smallholders, and differences in farm-retail price spreads. We derive equilibrium expressions for economic welfare for smallholder farmers and urban consumers under the two farming systems, and parameterize the model based on publicly available data and recent empirical literature. An extensive simulation analysis reveals several key results from transforming to a large-farm equilibrium: (i) rural household welfare almost always declines, (ii) total production of the staple almost always increases, (iii) the sum of urban and rural household welfare almost always increases, often by substantial amounts, and (iv) rural employment does not decrease, even with modest increases in capital intensity on large farms. Policies to promote farm consolidation, while protecting rural households from welfare losses, e.g., through income transfers, can achieve Pareto improvements for nearly all of the comparative equilibria studied.

PUBLICATIONS

Deininger, Klaus W., Songqing Jin, and Meilin Ma. 2021. "Structural Transformation of the Agricultural Sector in Low- and Middle-Income Economies," accepted *Annual Review of Resource Economics*.

Ma, Meilin, Jessie Lin, and Richard Sexton. 2021. "The Transition from Small to Large Farms in Developing Economies: A Welfare Analysis." *American Journal of Agricultural Economics*.

Ma, Meilin. 2021. "Insecure Land Tenure, Social Protection, and Resource Misallocation: Evidence from China's Agricultural Sector," *Economic Development and Cultural Change*.

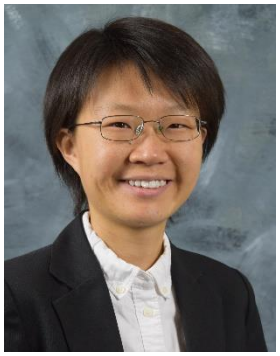
Ma, Meilin, and Richard Sexton. 2021. "Modern Agricultural Value Chains and the Future of Smallholder Farming Systems," *Agricultural Economics*, 52: 591-606.

Ma, Meilin, H. Holly Wang, Yizhou Hua, Fei Qin, and Jing Yang. 2021. "African Swine Fever in China: Impacts, Responses, and Policy Implications." *Food Policy*, 102: 102065.

Ma, Meilin, and Heng Zhu. 2020. "Efficiency of Decisions under Membership Heterogeneity and Government Regulations: Insights from Farmer Cooperatives in China," *Economic Development and Cultural Change*, 68(3): 1009-40.

Ma, Meilin, Tina Saitone, Richard Sexton, Richard Volpe, and Michelle Saksena, 2019. "Market Concentration, Market Shares, and Retail Food Prices: Evidence from the U.S. Women, Infants, and Children Program," *Applied Economic Perspectives and Policy*, 41(3): 542-62.

Biography



Dr. Meilin Ma is an assistant professor at the Department of Agricultural Economics, Purdue University. She earned her PhD degree from the University of California, Davis. Dr. Ma specializes in supply-chain economics and Industrial Organization in the context of US and China. She has published in peer reviewed journals, including top field journals like *Annual Review of Resrouce Economics*, *American Journal of Agricultural Economics*, *Agricultural Economics, Food Policy*, and *Economic Development and Cultural Change*.