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Title: Are Agricultural Markets More Developed Around Cities? Testing for Urban Heterogeneity in Separability in Tanzania

Between 2018 and 2050, Sub-Saharan Africa’s (SSA) urban population is expected to nearly triple—from 424 million to 1.26 billion people—leading to growing concerns about urban food security. As policymakers plan ahead, one relevant question is: are agricultural markets more developed around cities? Evidence from observational studies and agricultural location theory suggest so. However, urban heterogeneity has not yet been found in a common economic test of functioning agricultural markets—the separability result. The test is based on a key insight of the agricultural household model, which finds that a farm’s profit should be maximized independently from household utility given perfect factor markets (i.e., separability), but not so if the household faces at least two market failures (i.e., non-separability). In this paper, I test for geographic heterogeneity in separability between rural, peri-urban, and urban areas in Tanzania. Using 2014-15 data from the World Bank’s Living Standards Measurement Study and Integrated Surveys on Agriculture (LSMS-ISA) from Tanzania, I test the interaction between household size and residency in an urban or peri-urban district from one of Tanzania’s five largest cities. I find strong evidence that the correlation between labor demand and household size implying non-separability in rural areas is significantly weaker in three of these cities: Dar es Salaam, Arusha, and Mbeya. Given certain assumptions, this can be interpreted as evidence of increased agricultural market functionality around these cities relative to rural areas. This is important to policymakers as interventions where markets exist but fail some households should be different than where markets are missing entirely. However, results on maize and rice plots suggest that the markets for these food staples require further development even in urban areas. Rural areas also need additional investment because urban agriculture by itself is likely insufficient to address urban food insecurity in SSA. Overall, these results contribute to the debate on the role of agriculture in addressing urban food security in SSA and perhaps give validity to agricultural location theory and the separability test as tools to help policymakers characterize the nature of agricultural factor markets.