

## A Workshop on Estimating Large Demand Systems Using Household Survey Data

September 26, 2019

Abuja, Nigeria (exact venue to be confirmed)

Led by Dr. Chen Zhen & Dr. Ellen McCullough,  
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Understanding the roles of food prices, income and other economic drivers of household food choice is essential for evidence-based nutrition policymaking. Although it is simple to estimate an aggregate food demand regression using market-level data, it is much more insightful to examine demand for disaggregated food groups in a system framework using micro-level data. There are at least three reasons for preferring the latter approach. First, evaluation of many recent policy proposals (e.g., soda taxes) requires knowledge on consumer demand for food groups finely disaggregated based on their nutrient profile. Second, a systems approach is necessary to quantify the degree of substitution or complementarity between food groups. The cross-price effects often have important implications on the unintended consequences of a policy. Third, using micro-level data will help researchers understand potential heterogeneous responses to a policy across consumer types. Thanks to the increasing availability of high-quality household food consumption/purchase surveys, estimation of disaggregate food demand systems is becoming feasible for a growing number of low- and middle-income countries.

The goal of this workshop is to promote applications of large food demand systems to study food and nutrition policies in Sub-Saharan Africa. Workshop participants will get hands-on experience in using the state of the art, and yet tractable, econometric methods to address the challenges of micro-level demand modeling. Specifically, participants will learn techniques for reducing price endogeneity and unit value bias, stepwise estimation of high-dimensional demand system, accounting for censored demand, and accommodating complex shapes of Engel curves. Coding of the demand model will be done in SAS and using the Tanzania Household Budget Survey.

This workshop is hosted by the "[Harnessing Demand Systems for Improved Nutrition in Sub-Saharan Africa](#)" project, which is generously funded by the UK Department for International Development and the Bill & Melinda Gates Foundation.

### Tentative Schedule (Thursday, September 26):

9:00 am – 10:30 am:	Overview of flexible functional form demand systems
10:30 am -11:00 am:	Coffee break
11:00 am – 12:30 pm:	Econometric challenges and solutions
12:30 pm – 1:30 pm:	Lunch break
1:30 pm – 3:00 pm:	Coding the Exact Affine Stone Index (EASI) demand system in SAS
3:00 pm – 3:30 pm:	Coffee break
3:30 pm – 5:00 pm:	Interpreting results, extending the model, estimation issues and caveats
5:00 pm – 6:30 pm:	Social hour

**Pre-requisites:** This workshop is designed for Africa-based researchers who are recent PhDs, advanced doctoral candidates, or mid-career professionals looking to strengthen their demand modeling skill set. We expect participants to have successfully completed at least two years of PhD level coursework in Economics or a relevant Applied Economics field.

**Software/hardware requirements:** We will use the SAS University Edition, which is free to download and will work offline. We will expect participants to download SAS to their laptops before the workshop starts, as the download process takes a few hours (we will share [download instructions](#) with participants in advance of the workshop). The system requirements for the software are 64 bit processor, minimum 1 gb RAM, and either Windows (version 7, 7, 8.1 or 10) or Mac OSX (version 10.8 or later). Participants will also need one of the following browsers installed on your laptop (Firefox 21 or later; Chrome 27 or later; IE 9 10 or 11; Safari 6.0 or later).

**How to apply:** Though space is limited, we will do our best to accommodate all qualified researchers who would like to attend. To request a place in the workshop, please send an email with a very brief statement of your interest (up to 200 words) and your CV to Ellen McCullough ([emccullough@uga.edu](mailto:emccullough@uga.edu)).

**Financial support:** A very limited amount of financial support is available to Africa-based researchers to offset the costs of extending your stay in Abuja for one extra night following the AAEE meetings. We cannot support the costs of travel to/from Abuja. Please mention in your application email if you would like to be considered for financial support.

#### **Instructor Bios:**

*Chen Zhen* is an Associate Professor in the Agricultural and Applied Economics department at the University of Georgia. He holds the UGA Athletic Association endowment in food choice, obesity and health economics. Professor Zhen's research focuses on developing and large-scale food demand system models estimated using national food purchase surveys and scanner data. His research on using food demand models to predict the impact of soda taxes on nutrition intake, obesity, and government revenue has been featured in USA Today, New York Times, NPR and other media. Prior to joining UGA in 2015, he was a research economist at RTI International's Food and Nutrition Policy Program for nine years, conducting grant and contract research that supports policymaking at the federal and state level. Professor Zhen received his BA in Economics from the University of Colorado at Denver, MS in Applied Economics from Montana State University, and PhD in Economics from North Carolina State University.

*Ellen McCullough* is an Assistant Professor in the Agricultural and Applied Economics department at the University of Georgia. Her research focuses on the links between agricultural productivity growth and poverty reduction through the channels of structural change and labor productivity growth, food price reduction, and smallholder income growth. She has extensive experience using LSMS-ISA datasets for applied research. Prior to joining the faculty at the University of Georgia, Ellen worked as an Associate Program Officer at the Bill & Melinda Gates Foundation, where she managed a portfolio of grants to support household survey data collection, including the LSMS-ISA. She received her PhD in Applied Economics and Management at Cornell University and her undergraduate in Earth Systems at Stanford University.