Mini GE-LEWIE with confidence bounds

RoadMap of the GAMS code file named Ch3_Appendix_LEWIE_MonteCarlo	
Read the LEWIE spreadsheet from Excel into GAMS	Code line:
Name model in GAMS	1
Name sets (e.g. goods, factors, households)	8
Read data into GAMS from LEWIE spreadsheet (similar to Table 3.7)*	19
Define labor supply elasticity	70
Define subsets of sets (e.g. goods, factors) as tradable or non-tradable for simulations	74
Name model parameters	94
Run Monte Carlo simulations based on econometric estimates	
Set number of draws for simulation	111
Name variables (prices, values, production, income, consumption, market surplus)	117
Name model parameters (indexed by draw)	150
Read econometric parameter estimates from Excel into GAMS*	166
Draw parameter values from normal distribution for each simulation	198
Calibrate all other variable and parameters for each draw at household level*	215
Compute marketed surpluses at household and village levels*	269
Initialize all prices to 1 for each simulation and compute price value added per household*	298
Define Mini GE-LEWIE model	
Name variables to be optimized by the model	309
Name variables for initial variable values (“0” suffix)	341
Name and define model equations	373
Define “miniLEWIE” model	468
Run loop of Mini GE-LEWIE model before and after shock by draw	
Name base model variable solution values by draw (“1” suffix)	492
Name experiment/”after shock” variable solution values by draw (“2” suffix)	518
Name variables for difference between base and experiment variable values (“D”)	543
Name variables for percent change of experiment outcomes from base (“PC” suffix)	568
Loop begins	597
Define initial values of variables by draw (“1” suffix; see lines 482-505)	602
Define zero values by draw (these are called in the equations and data checks)	630
Define market closure conditions*	639
Solve “miniLEWIE” model before shock*	650
Define base model variable solution values by draw (“1 suffix”; see lines 482-505)	666
Increase exogenous income to poor by 1	690
Solve “miniLEWIE” model after shock*	696
Define experiment variable solution values by draw (“2” suffix; see lines 506-528)	701
Prepare results to create Table 3.8	
Define variables for difference between base and experiment variable values (“D”) and percent change of experiment outcomes from base (“PC” suffix), by draw*	729
Calculate mean and standard deviation for all variables across draws (1,2,D,PC)*	785
Produce Social Accounting Matrix (SAM) multiplier results*	1152
Set to output which simulation was made*	1192
Compute confidence bounds*	1198
Produce text file of results and export to GAMS project directory	1337

* denotes actions which are displayed in GAMS output