Empirical Exercise 8: Measures of the U.S. gains from trade

October 19, 2021

Instructor: Marc-Andreas Muendler   muendler@ucsd.edu
Teaching Assistant: Jacob Orchard   jdorchard@ucsd.edu

Due date and time: **October 29, 5pm**

Inputs and products

Please use Stata (any version) for your work. You may call any other software from within Stata (including Python, R, Perl, and system-level commands). Please base your analysis on the following file

    ITPD-E by USITC   itpd.dta

in the online data folder at `https://econweb.ucsd.edu/muendler/teach/21f/435/gen`.

   You may find the code from lecture 8 a useful reference: `lec08.do` in the online lecture folder `https://econweb.ucsd.edu/muendler/teach/21f/435/lec08`.

   Please submit three products to `canvas.ucsd.edu` by the due time: (i) a file with results titled *ee07.pdf*, (ii) a log file titled *ee07.log*, and (iii) a Stata code file titled *ee07.do* (which may call other software). **Your log file must exhaustively document the steps from the above input files to the output of results.**

Tasks

1. Preliminaries.

   (a) Construct one single data file for trade in goods and services. Use the ITPD-E data by USITC, do not remove self trade, keep all years 2000 through 2015, and aggregate the trade flows to the source country (exporter), destination country (importer), and year level (over all industries).

   (b) Compute market size $X_{dt} = \sum_s X_{sdt}$ by destination and year, and the share of self trade share (the share of expenditure on domestic goods and services) $\Lambda_{dt} = \frac{X_{ddt}}{X_{dt}}$ by destination and year. Use two values of the trade elasticity: $-\theta = -5$ following Costinot and Rodríguez-Clare (2014) and $-\theta = -3.5$ close to the lower bound from Eaton and Kortum (2002). For these two trade elasticities, compute the gains from trade G compared to counterfactual autarky using the formula $G_t = 1 - (\Lambda_{dt})^{\frac{1}{\theta}}$ by year.

2. Graph.

   - For the United States, plot the gains from trade for the years 2000-2016 under the two trade elasticities. *Hint*: Consider the command `graph twoway`.

3. Interpretation.

   - In a sentence or two, discuss the magnitude of the two measures of gains from trade and their changes over time.

   - In one sentence, compare the time series from your ITPD-E data and the formula for G to those in Costinot and Rodríguez-Clare (2018), Figures 4 and 6, based on WIOD data and CES demand (do not discuss methodological differences in the measures).

References

Costinot, Arnaud, and Andrés Rodríguez-Clare. 2014. "Trade Theory with Numbers: Quantifying the Consequences of Globalization." In *Handbook of International Economics*. Vol. 4, , ed. Elhanan Helpman, Kenneth Rogoff and Gita Gopinath, Chapter 4, 197–261. Amsterdam: Elsevier.

Costinot, Arnaud, and Andrés Rodríguez-Clare. 2018. "The U.S. Gains from Trade: Valuation Using the Demand for Foreign Factor Services." *Journal of Economic Perspectives*, 32(2): 3–24.

Eaton, Jonathan, and Samuel Kortum. 2002. "Technology, Geography, and Trade." *Econometrica*, 70(5): 1741–79.