Empirical Exercise 4:
Intra-industry Trade and Income Levels

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Due date and time: **August 29, 4:50pm**

Inputs and products

Please use Stata (any version) for your work. Please base your analysis on the following two data files

ITPD-E by USITC	`itpd.dta`
WDI Country file 2022	`WDICountry.csv`

in the respective online data folders `https://econweb.ucsd.edu/muendler/teach/22x/101/gen` and `https://econweb.ucsd.edu/muendler/teach/22x/101/conc`.

You may find the code from Lecture 11 a useful reference: *lec11.do* in the online lecture folder `https://econweb.ucsd.edu/muendler/teach/22x/101/lec11`.

Please submit three products to `canvas.ucsd.edu` by the due time (**no late submission accepted**): (i) a file with results and your verbal summary titled *ee04.pdf*, (ii) a log file titled *ee04.log*, and (iii) a Stata code file titled *ee04.do*. **Your log file must exhaustively document the steps from the above input files to the output of results.**

Tasks

1. Preliminaries.

   (a) Follow the data preparation steps for exports and imports in 2016 as in Lecture 11 (*lec11.do*), with two additions:

   - Obtain the World Bank's country classification into income groups from `https://econweb.ucsd.edu/muendler/teach/22x/101/conc/WDICountry.csv` prior to loading the ITPD-E data, select the variable `incomegroup`, and rename the country identifier to `iso_a3` for later merge. Concretely, you may find the following code useful:

     ```
     tempfile inccat
     import delimited using ///
        "$repo/conc/WDICountry.csv", delimit(",") clear
     keep *ountrycode incomegroup
     rename *ountrycode iso_a3
     sort iso_a3
     save `inccat'
     ```

   After preparation of the ITPD-E data, at the `iso_a3` country and industry level, use the command

     ```
     merge n:1 iso_a3 using `inccat', nogen
     ```

   to combine the World Bank income group categories with the trade data.

- Generate a new sector categories for all non-services industries in the ITPD-E data using code such as:

```
replace broad_sector=0 if broad_sector!=4
label define itpd_sec 0 "Non-Services", modify
```

2. Graphs for the year 2016, for each of two broad sector—non-services and services—and for each of two country groups by the World Bank in 2022—high-income and not high-income.

   - Plot histograms of the Grubel–Lloyd index for all country-industries within a broad-sector, producing a total of four graphs for the two sectors non-services and services and for two income groups of countries, high-income and not high-income.
   - Interpret your findings in one or two sentences per histogram.