ReadMe of the replication package for the thesis:

INTERNATIONAL TRADE OF SEMICONDUCTORS UNDER THE WTO INFORMATION TECHNOLOGY AGREEMENT: A GRAVITY MODEL

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# Description

This ReadMe file has been created to facilitate the replication of the thesis’ data results. The thesis focuses on the gravity model of trade.

# Data Availability and Provenance Statements

The International Trade and Gravity data were downloaded from the CEPII, the French center for research and expertise on the world economy (CEPII, 2022). To construct the database for the analysis, two databases from CEPII were used, freely available for download on their website:

**BACI database**: downloaded from the January 2022 version. This version is no longer available, however, CEPII has updated the bulk files to the January 2023 version, and can be downloaded from: <http://www.cepii.fr/DATA_DOWNLOAD/baci/data/BACI_HS96_V202301.zip>, under Data à Databases à International Trade à select BACI à select Download. Within the “Download” option, the latest version of BACI is available. The researcher can choose the time frame of the analysis. The time frame is also dependent on the Harmonized System (HS) classification of products. For this research, the time frame from 1996 to 2020 under the HS 1996 classification was selected and downloaded. BACI files are only available under the CSV format.

In addition to the international trade data files, the zip file contains the country codes and product codes useful for the construction of the dataset. Further details are available in the do file.

The original CSV data of the January 2022 version can be found in the “rawdta.zip” folder as files:

* BACI\_HS96\_Y1996\_V202201.csv
* BACI\_HS96\_Y1997\_V202201.csv
* BACI\_HS96\_Y1998\_V202201.csv
* BACI\_HS96\_Y1999\_V202201.csv
* BACI\_HS96\_Y2000\_V202201.csv
* BACI\_HS96\_Y2001\_V202201.csv
* BACI\_HS96\_Y2002\_V202201.csv
* […]
* BACI\_HS96\_Y2020\_V202201.csv
* country\_codes\_V202201.csv
* product\_codes\_HS96\_V202201.csv

**Gravity database**: the latest version has been used (November 2022) and can be downloaded from: <http://www.cepii.fr/DATA_DOWNLOAD/gravity/data/Gravity_csv_V202211.zip>, under Data à Gravity à Select Gravity à Download. Files can be downloaded as CSV, R, or Stata formats. To construct the dataset for the dissertation, files were downloaded as CSV.

The CSV file can also be found under the “rawdta.zip” folder, as file:

* Gravity\_V202211.csv

To transform the value expressed in current USD to constant USD, the **Producer Price Indices (PPI)** was downloaded from the Organization for Economic Cooperation and Development (OECD, 2023) through the URL: <https://data.oecd.org/price/producer-price-indices-ppi.htm>.

The CSV file is available in the folder “rawdta.zip”, as file:

* DP\_LIVE\_27062023163636818.csv

# License for Data

The BACI and Gravity data by CEPII are distributed under the terms of the Open License Etalab 2.0. The “Reuser” is free to reuse the “Information”:

• To reproduce it, copy it.

• To adapt, modify, retrieve and transform it.

• To share, disseminate, redistribute, publish and transmit it.

• Subject to: An acknowledgement of the authorship of the “Information”: its source (at least, the name of the “Grantor”, CEPII in this case) and the date of the most recent update of the reused “Information” (January 2022 in this case).

# Computational requirements

## Software Requirements

Stata (code was last run with version 17 for Windows)

* dataex
* asdoc
* reghdfe
* ppml
* groups
* estout
* treemap
* palettes

## Memory and Runtime Requirements

The code was last run on a 4-core Intel-based laptop with Windows version 21H2.

# Description of programs/code

**Download** the **“rawdta.zip”** folder.

**Extract/unzip** the contents of the “rawdta.zip” folder.

Within the extracted “rawdta” folder, you will find a subfolder named “BACI”. This folder contains an additional subfolder called “BACI\_96\_20”, which includes the CSV datasets downloaded from CEPII, as previously explained.

Also within the “rawdta” folder, you will find another subfolder called “GRAVITY”, it includes the CSV files downloaded from CEPII necessary for constructing the gravity model.

Moreover, within the “rawdta” folder, the PPI file downloaded from the OECD is available.

Place the unzipped **“rawdta” folder** within your **root directory**.

Place the do file **“do\_file\_final.do”** within your **root directory**. This file will extract and reformat all datasets referenced above. The resulting STATA format files will be automatically saved in a new folder named **“trade”** within the root directory.

Within the do file “do\_file\_final.do”, ensure the line below “create a log file” is included. Once you run the entire do file, the log file will be saved as **“log\_ITA.smcl”** in the root directory. This log file will capture the outputs of the do file.

The file “baci\_gravity\_merged.dta” saved within the “trade” folder will be used for the data analysis, which will be ran through a different do file.

Place the do file **“data\_analysis.do”** in your **root directory**. It will include all the regression commands to replicate the estimation results of the thesis.

The do file “data\_analysis.do” will automatically save the “regressions.dta” file within the “analysis” folder in your root directory. Additionally, it will create a docx file named “results\_thesis\_EDN.docx” in the root directory. This docx file will include all the regression results (Table 1 to Table 5).

Within the do file “data\_analysis.do”, ensure the line below “create a log file” is included: once you run the entire do file, the log file will be saved as **“log\_regressions\_analysis.smcl”** in the root directory. This log file will capture the results of the regressions created from the do file.

# References

Conte, M., P. Cotterlaz and T. Mayer (2022), "The CEPII Gravity database". CEPII Working Paper N°2022-05, July 2022.

Gaulier, G. and Zignago, S. (2010) BACI: International Trade Database at the Product-Level. The 1994-2007 Version. CEPII Working Paper, N°2010-23

OECD (2023), Producer price indices (PPI) (indicator). doi: 10.1787/a24f6fa9-en (Accessed on 30 June 2023)

Vilhuber, L., Connoly, M., Koren, M., Llull, J., Morrow, P. (n.d.). Template readme and guidance. A template README for social science replication packages. https://social-science-data-editors.github.io/template\_README/template-README.html