

Foreign Demand Shocks and Domestic Value Added: Firm-Level Evidence from Viet Nam

This folder contains the reproducibility package for the Working Paper “Foreign Demand Shocks and Domestic Value Added: Firm-Level Evidence from Viet Nam” by Anmol Agarwal, Alessandro Barattieri and Aaditya Mattoo

If you run into any troubles running this code or reproducing results, please send an e-mail to aa2bp@virginia.edu

Data Availability Statement

- Some data cannot be made publicly available
- Data is stored in 3 folders – Raw, Intermediate and Clean
- **Publicly available datasets used:**

(1) *BEC Classification* (<https://unstats.un.org/unsd/trade/classifications/bec.asp>):

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\bec_classif_hs6.xlsx"

(2) *Comtrade* (<https://comtradeplus.un.org/>):

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\imports_6d_vietnam.csv"

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\us_import_non_vnm2.csv"

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\chn_export_non_vnm.csv"

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\allcty_imports_2d.csv"

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\us_imports_2012_19.csv"

Instructions to download:

- In Periods, select years from 2012-2019
- In HS commodity codes, select AG6
- In reporters select United States or Viet Nam depending on use
- In Partners, select All
- In Trade Flows, select Exports and Imports
- Additional selections : Total Modes of Transport + Total customs procedure codes

(3) *US Tariffs on China* ([https://www.piie.com/publications/working-papers/us-china-trade-war-and-phase-one-](https://www.piie.com/publications/working-papers/us-china-trade-war-and-phase-one-agreement?gad_source=1&gad_campaignid=10567638465&gbraid=0AAAAADHO67Usgv70C5vBkmx5fNFone8iV&gclid=CjwKCAiAuIDJBhBoEiwAxhgyFguXMav66vXVF-UwWrkQpq7GUoxnJSYCzZYqiS-ZewIK_CCy_fa7mBoCPUYQAvD_BwE))

[agreement?gad_source=1&gad_campaignid=10567638465&gbraid=0AAAAADHO67Usgv70C5vBkmx5fNFone8iV&gclid=CjwKCAiAuIDJBhBoEiwAxhgyFguXMav66vXVF-UwWrkQpq7GUoxnJSYCzZYqiS-ZewIK_CCy_fa7mBoCPUYQAvD_BwE](https://www.piie.com/publications/working-papers/us-china-trade-war-and-phase-one-agreement?gad_source=1&gad_campaignid=10567638465&gbraid=0AAAAADHO67Usgv70C5vBkmx5fNFone8iV&gclid=CjwKCAiAuIDJBhBoEiwAxhgyFguXMav66vXVF-UwWrkQpq7GUoxnJSYCzZYqiS-ZewIK_CCy_fa7mBoCPUYQAvD_BwE))

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\2.Tariff Data Raw.xlsx"

(4) *USA Trade Census* (<https://usatrade.census.gov/>):

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\us_hs10_imports_16_17.csv"

Instructions to download:

- Select Imports under Harmonized System (HS) District-level Data
- Under Commodity, select all 10 digit commodities
- Under Country, click on the green tick next to World Total. This selects all the countries
- Under District, select All districts
- Under time, select years 2015-2019
- Select create report and download report data

(5) *Trade in Value-Added (Tiva) Database*(<https://www.oecd.org/en/topics/sub-issues/trade-in-value-added.html>)

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\dvar_tiva.xlsx"

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Raw\tiva_vnm_ind_match_delta_dta"

(6) *NAFTA Rules of Origin*

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Intermediate\RoO_NAFTA.dta"

(7) *Vietnam I-O table*

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Intermediate\IO_1997_DR_HS92_joinby_December_2015.dta"

(Both (6) and (7) are downloaded from the Conconi et al 2018 AER replication package here: <https://www.aeaweb.org/articles?id=10.1257/aer.20161151>

- **Restricted Data:**

(8) *VietNam Enterprise Survey (VES) Data*

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Intermediate\4analysis_2015_2021_April2024.dta"

(9) *Viet Nam Customs Trade Data*

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Clean\firms_vnm_trade.dta"

Both (8) and (9) are obtained through a contract with the General Statistical Office (GSO) in Hanoi, Vietnam. Details are:

NATIONAL STATISTICS OFFICE'S WEBSITE

Address: 54 Nguyen Chi Thanh Street, Lang Ward, Ha Noi, Viet Nam

Tel: 024 73046666, ext 8668

Office: 024 73046666, ext 1006

Email: banbientap@nso.gov.vn

(10) *FDI Markit Database*

"C:\Users\agarw\Dropbox\AAA_DVAR_VNM\Data\Clean\fdi_markets_10_22_firmid.dta"

Investment-level data on foreign direct investment are commercial (they have been downloaded from fDiMarkets, a service from the Financial Times), and cannot freely posted online. This replication package includes the code to work from the FDI and TDM data which other scholars can access from fDiMarkets and TDM, purchasing a commercial license. We can confidentially share the data on a bilateral basis exclusively for replication purposes. Please get in touch with the authors in case interested on how to access these data.

Statement about Rights

- I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.
- I certify that the author(s) of the manuscript have documented permission to redistribute/publish the data contained within this replication package. Appropriate permission are documented in the LICENSE.txt file.

Code Description

- All Stata do files are stored under the folder Do files.
- "Analysis.do" - runs all the do files and produces all the results (all tables and all figures) in the paper
- "0_Master.do" - sets the directories
- "1_DVAR Calculation.do" - measures firm level DVAR in Viet Nam
- "2a_US Demand Shocks.do" - Constructs the product-level US import demand shocks
- "2b_China Supply Shock.do" - Constructs the product-level China export supply shocks
- "2c_Europe Asia Demand Shocks.do" - Constructs the product-level Europe and Asia import demand shocks
- "2d_Tariff Changes.do" - Constructs the product-level tariff changes (US on China)
- "2e_US Shock Prediction.do" - Tests the prediction of US shock based on past values of US shocks
- "3a_Main Data Cleaning.do" - cleans the data, creates firm level shocks, combine with DVAR data, add firm level variables and controls
- "3b_ROO Measure.do" - Constructs the NAFTA ROO measure at HS 6d
- "4a_Figures.do" - Produces all the non-regression figures in the paper (all figures except event studies and ownership heterogeneity)
- "5a_Data prep.do" - Prepares data for regressions, sets globals for main explanatory variables
- "5b_Regressions DID.do" - Runs the main DID regressions and produces tables

- “5c_Regressions Event Study.do” - Runs the main Event study regressions and produces figures
- “5d_Regressions Heterogeneity.do” - Runs the heterogeneity (by ownership, size, industry etc.) and produces tables/figures
- “5e_Regressions Tariff Exposure.do” - Runs the robustness check using direct tariff exposure of firms instead of demand shocks as explanatory variable
- “5f_Robustness.do” - Runs the additional robustness in the paper and produces tables/figures

Instructions for Replicators

- The codes will replicate all the graphs and tables from the paper using the following steps
- Open the folder and navigate to Do files/Analysis.do
- In there, please update the directory to your own, following the code’s directions.
- Run the Analysis.do file. All tables and figures in the paper will be reproduced
- The individual do files used in the Analysis.do also indicates the specific lines of code for each figure and table being reproduced.

Computational Requirements

- Stata (code was run with version 18). reghdfe version 5.7.3 13nov2019 should be installed for regression analysis
- The file Analysis.do was last run on Windows 11 OS with 32 GB RAM and took approximately 17 minutes to run.

List of Exhibits:

The provided code reproduces:

- All tables and figures in the paper as follows:

Name	Do-file name	Note
Figure 1	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure 2	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure 3	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure 4a	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 4b	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 5a	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures

Name	Do-file name	Note
Figure 5b	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 6a	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 6b	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 7a	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 7b	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 8	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 9a	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 9b	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 9c	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 10a	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 10b	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 10c	5c_Regressions Event Study.do	AAA_DVAR_VNM/Figures
Figure 11	5e_Regressions Tariff Exposure.do	AAA_DVAR_VNM/Figures
Figure 12	5f_Robustness.do	AAA_DVAR_VNM/Figures
Figure 13	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure 14	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure 15	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure 16	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure 17	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure 18	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure 19	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure 20	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure 21	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure A1	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure A2	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure A3	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure A4	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure A5	4a_Figures.do	AAA_DVAR_VNM/Figures
Figure A6	5f_Robustness.do	AAA_DVAR_VNM/Figures
Figure A7	5f_Robustness.do	AAA_DVAR_VNM/Figures
Figure A8	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures

Name	Do-file name	Note
Figure A9	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure A10	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure A11	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure A12	5d_Regressions Heterogeneity.do	AAA_DVAR_VNM/Figures
Figure A13	4a_Figures.do	AAA_DVAR_VNM/Figures
Table 1	5b_Regressions DID.do	AAA_DVAR_VNM/Output
Table 2	5b_Regressions DID.do	AAA_DVAR_VNM/Output
Table 3	5b_Regressions DID.do	AAA_DVAR_VNM/Output
Table 4	5f_Robustness.do	AAA_DVAR_VNM/Output
Table A1	3a_Main Data Cleaning.do	AAA_DVAR_VNM/Output
Table A2	2e_US Shock Prediction.do	AAA_DVAR_VNM/Output
Table A3	2a_US Demand Shocks.do	AAA_DVAR_VNM/Output
Table A4	3a_Main Data Cleaning.do	AAA_DVAR_VNM/Output

Folder Structure

Details on the folder structure are as follows:

AAA_DVAR_VNM

```

├── Data
│   ├── Raw
│   ├── Intermediate
│   └── Clean
│
├── Do files
│   ├── 0_Master.do
│   ├── 1_DVAR Calculation.do
│   ├── 2a_US Demand Shocks.do
│   ├── 2b_China Supply Shock.do
│   └── 2c_Europe Asia Demand Shocks.do

```

- | |— 2d_Tariff Changes.do
- | |— 2e_US Shock Prediction.do
- | |— 3a_Main Data Cleaning.do
- | |— 3b_ROO Measure.do
- | |— 4a_Figures.do
- | |— 5a_Data prep.do
- | |— 5b_Regressions DID.do
- | |— 5c_Regressions Event Study.do
- | |— 5d_Regressions Heterogeneity.do
- | |— 5e_Regressions Tariff Exposure.do
- | |— 5f_Robustness.do
- | |— Analysis.do
- |
- |— Output
- |— Figures
- |— Literature