

## International Trade and Macro: Trade data

# Outline

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- ▶ Trade data are very good (they are used to collect taxes!). We know much, much more about what happens between countries than we do within countries. This is a major strength of studying international topics.
- ▶ It is common to use “international” data and episodes to learn about fundamental questions of economics. How do firms price? How do they enter new markets? Multinational firm data tell us about intra-firm transactions. . .
- ▶ Roadmap
  1. Customs data
  2. Tariffs
  3. Prices
  4. Firm-level “census” data

## Trade data are everywhere

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- ▶ These slides are largely based on the United States
- ▶ Most of the data we discuss are collected everywhere. The more aggregate data (which is still quite disaggregated) is easily available for almost every country in the world.
- ▶ More disaggregated data and details about specific trade policy are often available from country-specific sources.
- ▶ More on where to find data later. . .

## Customs data

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- ▶ When a shipment enters the country, it is accompanied by [documentation](#) about the goods in the shipment.
- ▶ Goods are identified by their 10-digit Harmonized System code
  - ▶ 2-digit *chapters*
  - ▶ 4-digit *headings*
  - ▶ 6/8/10-digit *subheadings*
- ▶ The definition of a good at the 6-digit level is harmonized across all countries using the system.
- ▶ The 8/10-digit levels are for country-specific use

## Examples

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- ▶ Cotton thread is [5204](#)
  - ▶ 5204.11.00 is “Containing 85 percent or more by weight of cotton (200)”
  - ▶ It is measured in kilograms
  - ▶ The most-favored-nation (MFN) tariff is 4.4%
  - ▶ The “column 2” tariff is 25.5%
  - ▶ The tariff is zero if the exporter is part of a trade agreement
- ▶ Peas are [0710.21](#)
  - ▶ 0710.21.20 is “If entered during [. . .] July 1 to September 30, inclusive, in any year”
  - ▶ 0710.21.40 is “Other”
  - ▶ Measured in kilograms
  - ▶ MFN tariffs differ by subheading: 1 cent/kg vs. 2 cent/kg
  - ▶ Column 2 tariff is 8.6 cents/kg
  - ▶ The tariff is zero if the exporter is part of a trade agreement

## Finding the data

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- ▶ In the United States, data are processed by the [Census Bureau](#)
  - ▶ Left-hand menu provides different ways into the data
  - ▶ Country product data
  - ▶ State level trade data
  - ▶ There is an [API](#) for the monthly data from 2013–present
- ▶ The very detailed data can be obtained from the API and the CDs published before 2013.
  - ▶ I have the import data at the hs10-country-month level [here](#)
  - ▶ Maybe someday I will get the export data together...
- ▶ Let's explore some data. `data_exploration.ipynb` and `2013-2021-hs02.h5` on the course website
- ▶ You can view the notebook [here](#)

## Data for other countries

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- ▶ Customs data are available for almost every country in the world
- ▶ At each point in time and for each good, we have an  $N \times N$  matrix of trade flows, where  $N$  are the number of countries. e.g., trade from China to Mexico and trade from Mexico to China. This is a lot of data!
- ▶ This data is available from [COMTRADE](#)
  - ▶ The online interface is a bit clunky
  - ▶ There is an [API](#)

## Customs microdata

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- ▶ The individual customs records can provide further detail
  - ▶ The importer and exporter
- ▶ Have been used to
  - ▶ study matching between importer and exporter
  - ▶ measure the length/durability of a relationship
  - ▶ how many exporters an importer uses
  - ▶ how often an importer imports
- ▶ The U.S. data are confidential, but access is possible
- ▶ The data are publicly available for some other countries
- ▶ These data sets are very large



## Tariffs in the United States

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- ▶ The tariff system is mostly designed by lawyers, so it is complex. What follows is an over simplification.
- ▶ As a member of the WTO, the United States considers member countries to have *normal trade relations* (NTR) and offers them MFN or NTR tariffs.
- ▶ Countries without NTR status pay “Column 2” duties. These higher tariffs were largely set as part of the [Smoot-Hawley Act](#), a protectionist response during the great depression. Currently, only Cuba and North Korea are non-NTR countries.
- ▶ The United States is part of many trade agreements, such as the U.S.-Mexico-Canada Agreement (USMCA) which replaced the North American Free Trade Agreement (NAFTA). The agreement provides zero tariffs for most goods traded between the three signatories.
  - ▶ A, A\*, A+: Generalized System of Preferences, which provides market access to developing countries
  - ▶ K: Agreement on Trade in Pharmaceutical Products
  - ▶ SG: US-Singapore Free Trade Agreement (FTA)
  - ▶ Lots more. . .

## Tariff policy uncertainty

- ▶ China granted NTR status in 1980, tariffs fall from Column 2 to MFN
- ▶ NTR status must be renewed each year, voted on by congress from 1990
- ▶ Creates uncertainty in future tariffs. Tariffs could always revert to Column 2
- ▶ When China joins WTO in 2001, uncertainty goes away
- ▶ Great episode for studying the effect of uncertainty
  - ▶ Does uncertainty decrease export participation?
  - ▶ Do export grow after 2001?
  
- ▶ We will look at this in more detail later. . .

## Prices

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- ▶ Data come in terms of value ( $P \times Q$ ) and quantities. We can recover a price measure.
  - ▶ Often referred to as “unit value” rather than price
  - ▶ This is an imprecise measure owing to mis-measurement and aggregation bias (Silver, 2009).
  - ▶ It gets used often.
- ▶ Surveys are often better but there are challenges with these price indices owing to product replacement (Nakamura and Steinsson, 2012)

## What price?

- ▶ There are many different potential prices.
- ▶ Imagine a shoe traveling from Italy to the United States
  - ▶ **Factory gate price:** The price as it leaves the shoe factory.
  - ▶ **Free alongside ship (FAS/FOB) price:** Factory gate price + transport costs to the port + export-country taxes and fees. The free on board price is very similar concept.
  - ▶ **Cost, insurance, and freight (CIF) price:** The FAS price + transport costs and unloading costs.
  - ▶ **Retail price:** CIF price + tariffs + transport from the port + wholesale/retail margins+ . .
- ▶ Note that the retail price of an imported good contains a lot of untraded input costs
- ▶ Data reported by the exporting country are typically priced FAS
- ▶ Data reported by the importing country are typically priced CIF

## Firm-level data sets

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- ▶ Many countries sample/census firms, particularly manufacturing firms
  - ▶ Collect data on sales, investment, employment, industry, etc. . .
  - ▶ Some collect data on exports and imports
- ▶ These datasets allow us to see how firm characteristics vary with trade status
  - ▶ Exporting firms are bigger, more productive, pay higher wages, . . .
- ▶ Allow us to decompose aggregate trade
  - ▶ How many firms export?
  - ▶ How much do firms export, conditional on exporting?
  - ▶ How much larger are exporters than nonexporters?
- ▶ In the U.S., these data are confidential, some countries release anonymized data
  - ▶ See also [WB enterprise data](#)
  
- ▶ Lot's more on this in the next class

## References

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- Nakamura, Emi and Jón Steinsson (2012). “Lost in Transit: Product Replacement Bias and Pricing to Market.” *The American Economic Review* 102 (7), pp. 3277–3316.
- Silver, Mick (2009). “Do Unit Value Export, Import, and Terms-of-Trade Indices Misrepresent Price Indices?” *IMF Staff Papers* 56 (2), pp. 297–322.