Lecture 1: Introduction to trade

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Road map

- First three lectures:

  1. A brief introduction to international trade
  2. Trade and inequalities
  3. Trade and the environment

- Next three lectures: taught by Pr. Dirk Veestraeten.

- Grading: one final exam only.

- Compulsory readings can be found in the reader. Additional material referenced on Canvas. No textbook required, but one suggestion is Krugman, Melitz, Obsfeld, *International economics: theory and policy* (2018, 11th edition).

Learning goals

First three lectures: we will learn about international trade theory and policy through the lens of two topical issues: inequalities and the environment.

By the end of these lectures, you should:

- know about several important models in international trade theory;

- be able to solve by yourself some of these models, such as the Melitz model;

- be able to think critically about empirical issues associated with measuring the mechanisms predicted by these models;

- understand the mechanisms through which trade affects economic inequalities and the environment;

- derive the policy implications of these mechanisms;

- be equipped to write a master thesis on a trade topic.

About me

- Ph.D. at Paris School of Economics;

- Assistant Professor in the MInt group at UvA;

- Main research field: Environmental Economics;

- Main research topics:
  - Optimal design of environmental taxes;
  - Distributive effects of environmental policies;
  - Public support for environmental policies;

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What about you? What triggers your interest in international trade?

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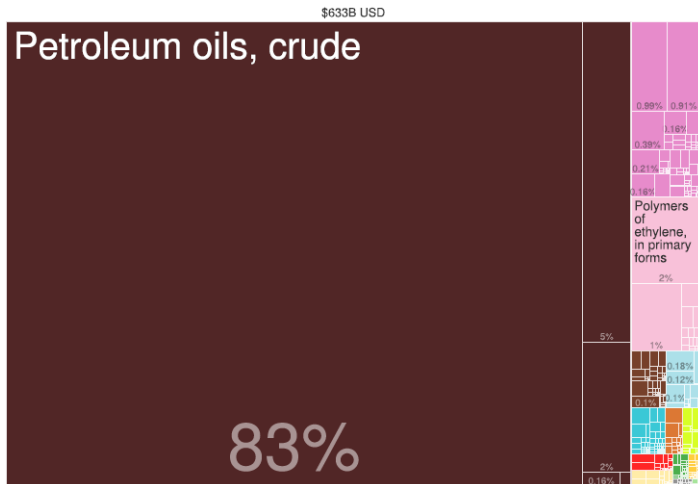
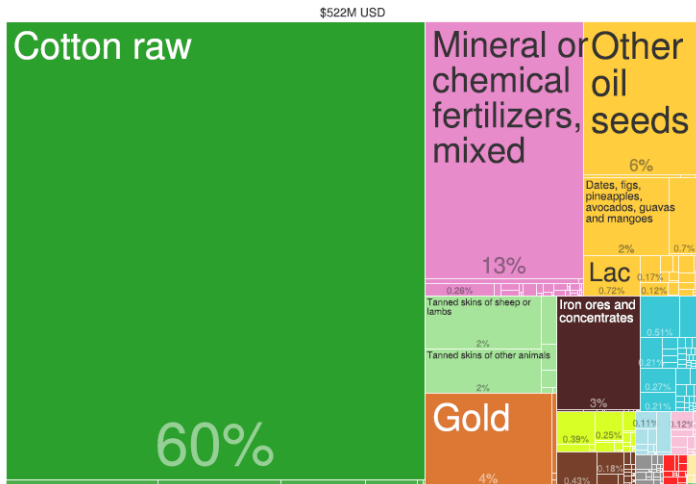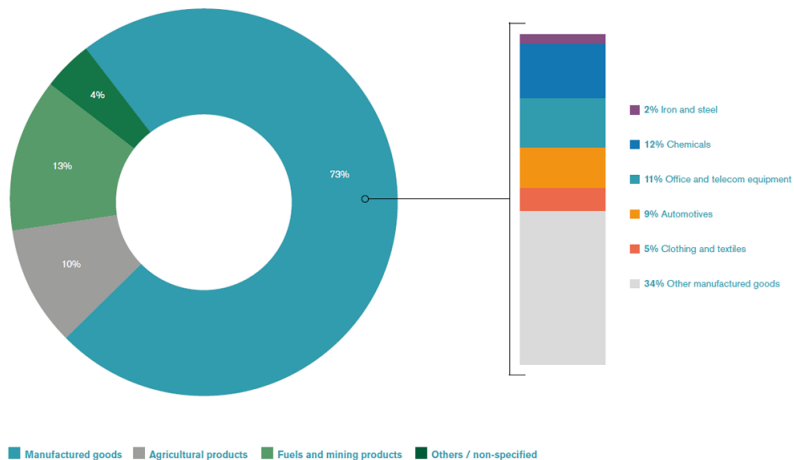# What do countries export?

What do countries export?

$2.25T USD

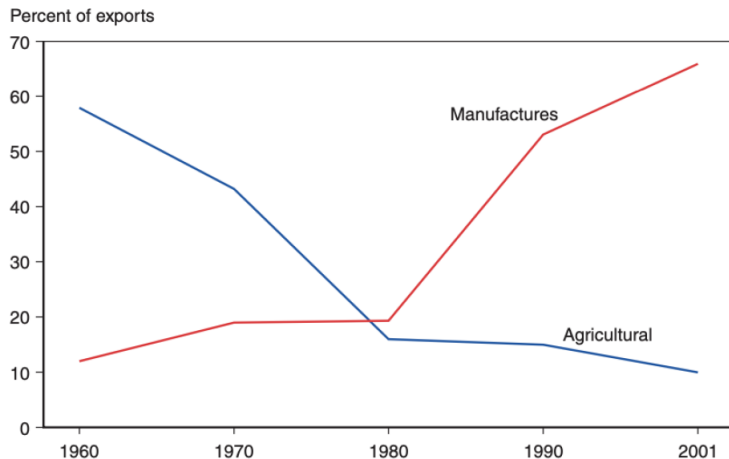# What do countries export?

What do countries export?

What do coutries export?

Figure: World merchandise exports by major product groups, 2016 (Share, %)
(Source: WTO)

Evolution of goods traded

Source: United Nations Council on Trade and Development

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Who trades the most?
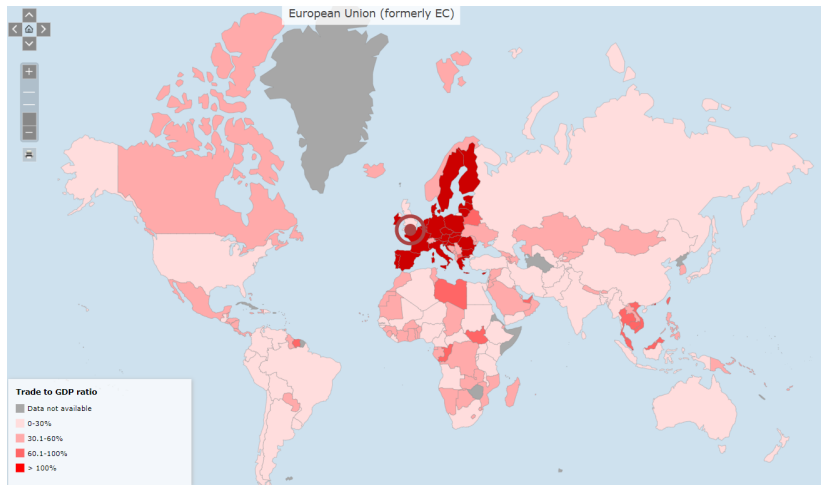
Figure: Trade to GDP ratio per country

Source: WTO. Note: Total trade of goods and commercial services (exports + imports, balance of payments basis — jargon buster) divided by gross domestic product (GDP). European Union taken as a whole. See also this link

Who trades with whom?
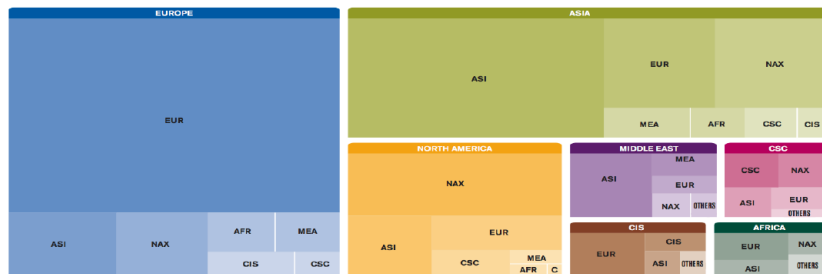
NAX: North America / CSC: Central and South America and the Caribbean / EUR: Europe
CIS: Commonwealth of Independent States / AFR: Africa / MEA: Middle East / ASI: Asia

Figure: World merchandise exports by region and destination in 2009

What are the **critical determinants** of trade flows?

Gravity equation

Tinbergen (1962) used an analogy with Newton's universal law of gravitational force to describe trade flows between two countries i and j:

$$T_{i,j} = A \frac{Yi^{\alpha}Y_j^{\beta}}{D_{i,j}^{\gamma}}$$

where $T_{i,j}$ represents the bilateral trade flow between the two countries, Y is countries' GDP, $D_{i,j}$ their distance, and A a constant.

Estimating these parameters from regressions, it appears that α, β, $\gamma \approx 1$:

- doubling the GDP of *one* of the two countries leads to a doubling of trade flows;
- doubling the distance between two countries leads to a reduction of trade flows by two;
- this "law" seems stable despite the enormous reduction in transportation costs during the last decades.

Example: United States
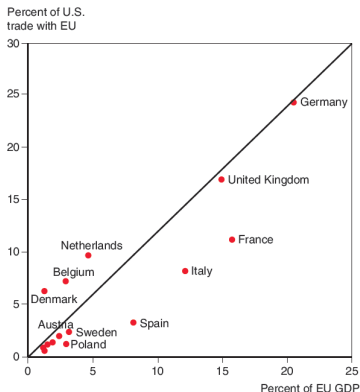
(a) Economic size matters
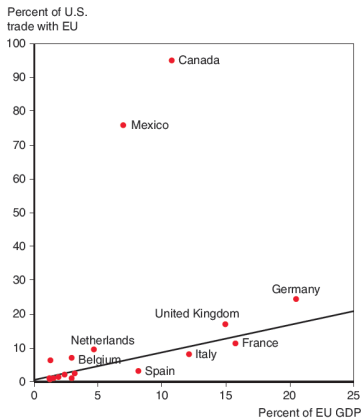
(b) Distance matters

Figure: Trade with the US as a function of economies' size

Limitations

Of course, GDP and distance alone do not enable to get a perfect fit. Other factors play a role, such as:

- a common language (e.g. francophonie, see next slide);
- a common currency (e.g. euro-zone);
- cultural ties (e.g. religion, legal system);
- historical (e.g. colonial) ties;
- a common border;
- business networks;
- trade agreements;
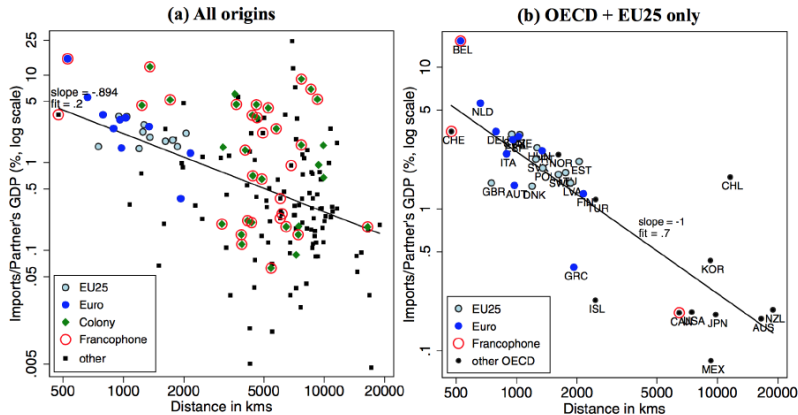- etc.

An example: gravity equation for France

Figure: France imports in 2006 as a function of distance

Remark: large noise in the left figure, much less in the right one. Still, in both cases, slope very close to 1.

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Evolution in trade flows

Globalization over 5 centuries (1500-2011)
Shown is the sum of world exports and imports as a share of world GDP (%)
The individual series are labeled with the source of the data

Our World in Data

Penn World Tables (8.1)

Klasing and Milionis (2014)

Klasing and Milionis (2014)
(based on Maddison data)

Estevadeordal, Frantz and Taylor (2003)
– Upper bound
– Lower bound

Data sources: Klasing and Milionis (2014), Estevadeordal, Frantz and Taylor (2003) and the Penn World Tables Version 8.1

Evolution in trade flows

Global trade volume as a percentage of GDP since 1970*
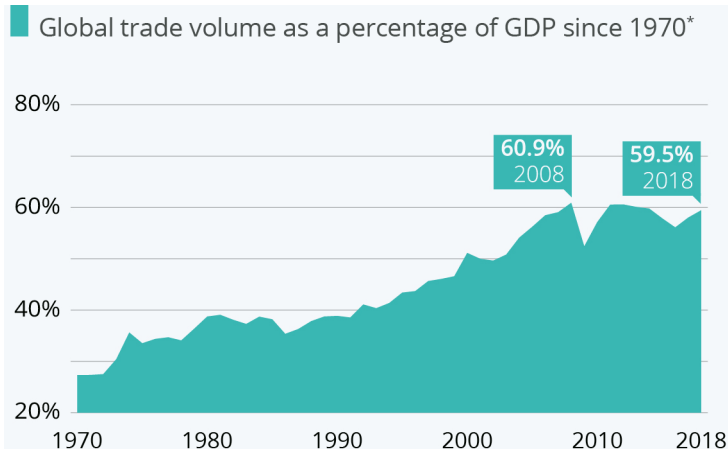
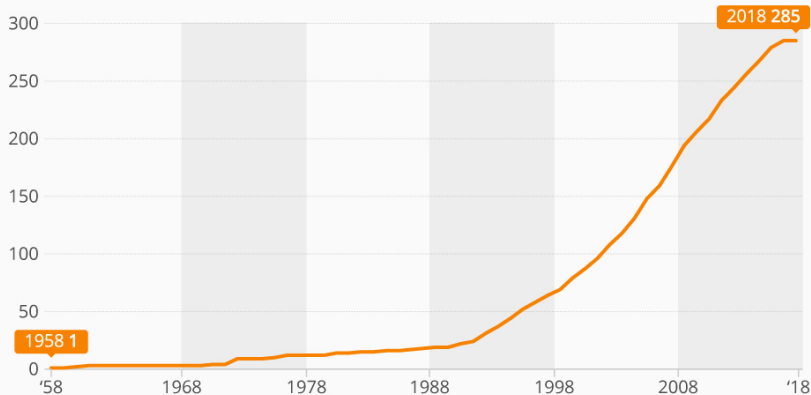* Trade is the sum of exports and imports of goods and services
  measured as a share of gross domestic product.
Source: World Bank

Worldwide Trade Agreements

Number of worldwide in-force regional trade agreements (RTAs) since 1958*
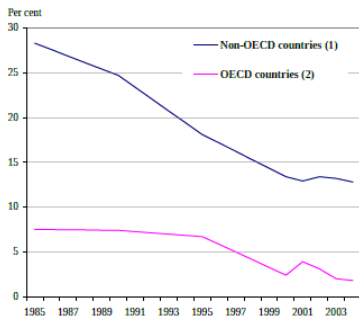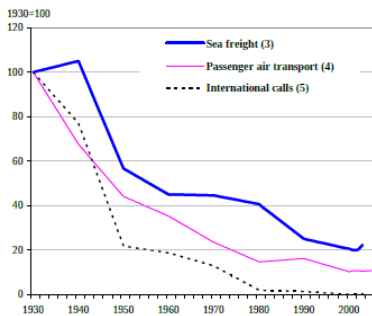
2018 285

1958 1

'58 1968 1978 1988 1998 2008 '18

As of March 2018
* Physical RTAs: goods, services & accessions to an RTA
are counted together, by year of entry into force.

@StatistaCharts Source: WTO

statista

Fall in trade and communication costs

Tariffs have been lowered

Real transport and communication costs have fallen

Source: OECD

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Trade policies: a typology

Trade policies can take many forms, *e.g.*:

- import tariffs;
  - specific (*i.e.* excise) or ad-valorem taxes

- export subsidies;

- import quotas;

- voluntary export restrictions;

- various regulations
  - *e.g.* testing, labeling, domestic content requirement, etc.

Evolution of import tariffs

Figure: Average tariff rate of the US

Historically important instrument, but has largely declined, sometimes substituted by other instruments.

An example of (many) trade policies: the EU-China solar panels trade dispute

Context: in 2012, increasing demand for solar panels in Europe, and rapid growth of the solar panel industry in China. 90% of Chinese production is exported, including 80% to the European market. EU producers complain about an unfair competition.

- EU investigation: concludes that Chinese solar panels benefit from subsidies and that "the fair value of a Chinese solar panel sold in Europe should be 88 per cent higher than the price at which it is sold" (EU).

- In one year, tariffs on Chinese solar panel exports increased from 11.8% to 47.6%.

- China retaliates: anti-dumping probe on European wine, and threats to do the same on luxury cars.

- Risk of starting a very costly trade war: the EU is China's biggest international trading partner, and China is the EU's second biggest partner, after the US.

$\rightarrow$ To avoid this, the two parties settled an agreement: minimum price on Chinese exports and a limitation of export volumes.

When countries do not agree: the China-US trade war
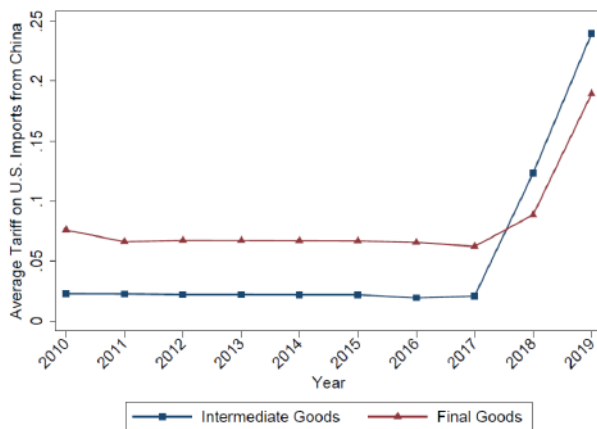
Note: Classification into end-use categories based on the United Nation's Classification by Broad Economic Categories (4th Revision). Weighted average tariffs use the value of imports from China in each HTS10 category in 2015 as weights. Further details in the appendix.

Figure: Average U.S. Tariffs on Imports from China (Source: Grossman & Helpman, 2021)
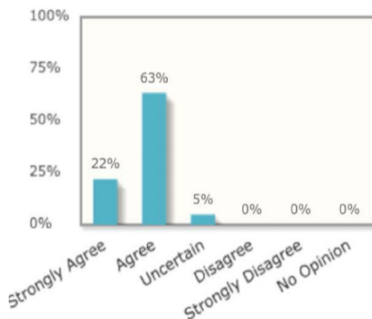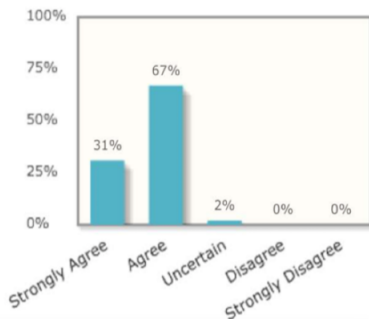
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What do economists think about trade

Question B: On average, citizens of the U.S. have been better off with the North American Free Trade Agreement than they would have been if the trade rules for the U.S., Canada and Mexico prior to NAFTA had remained in place.
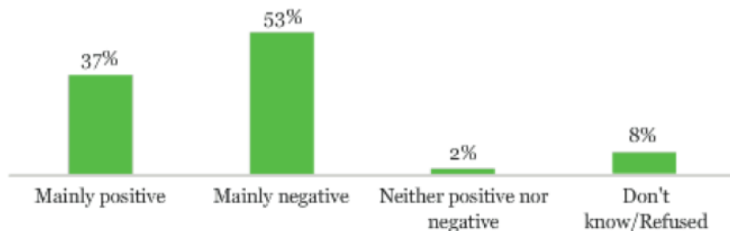
Responses

Responses weighted by each expert's confidence

What do citizens think about trade

American Views on NAFTA

Thinking about the North American Free Trade Agreement (or NAFTA) that includes Canada, the United States, and Mexico, what effect has NAFTA had on the U.S. economy? Has it been . . . ?

GALLUP POLL

Pros and cons

On the positive side: trade enables society to perform economic activity where it is the most efficient, and therefore increase **aggregate gains**:

- typically, the opportunity costs of production are reduced if production of goods/tasks is reallocated towards producers which have a comparative advantage in these goods/tasks;
- trade leads to more diversity in consumption goods, which consumers value.

On the negative side: there are also some reasons to be concerned with trade:

- the aggregate gains from trade may hide important **distributive effects**: trade may not benefit to all, and generate winners and losers;
- the aggregate gains may be dampened – and even become negative – in the presence of **market failures**, such as:
  - externalities (e.g. pollution, child labor);
  - public good (e.g. cultural goods);
  - imperfect competition (e.g. in industries controlled by a monopolist);
  - asymmetric information (e.g. if externalities from the production process are imperfectly known by consumers).

Next sessions

<u>In this course:</u> we focus on two key issues that are both affected by international trade and highly relevant to society:

- **economic inequalities** (lecture 2);
- **environmental degradation** (lecture 3).