CEPII
RECHERCHE ET EXPERTISE
SUR L'ÉCONOMIE MONDIALE

CEPII Trade Data : the *BACI* and *TUV* databases

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UN Comtrade Data Fair

September 25th

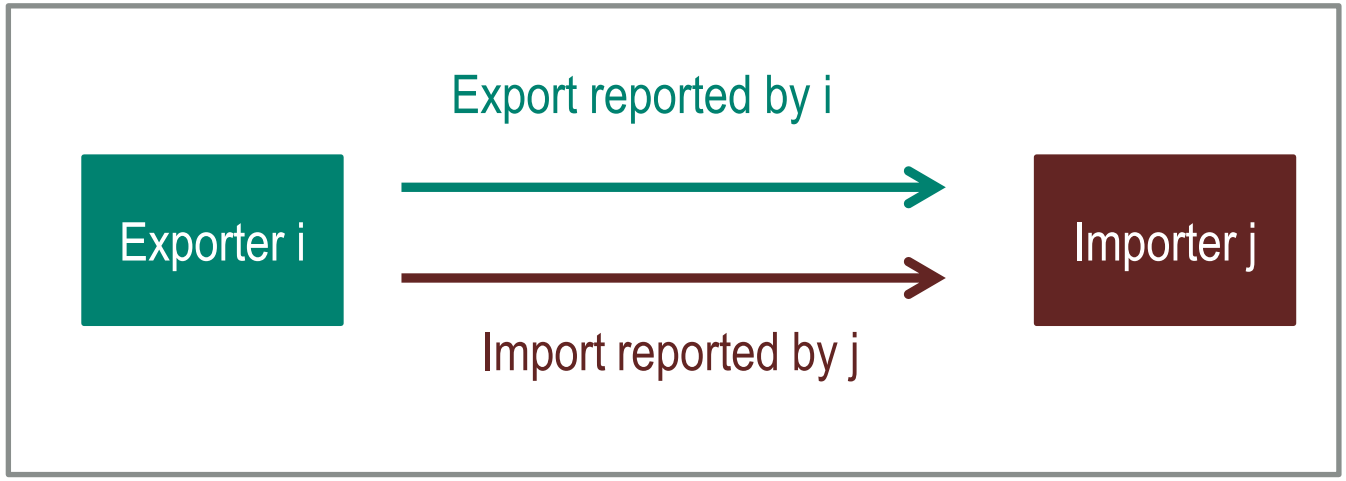
The CEPII

- French research center in **international economics**
  - analyses on the **world economy** and its evolution
  - produces studies, **research**, **databases**
  - for academics, private and public decision-makers, international institutions, economists, civil society, the media

- Need of **accurate**, **comprehensive** and **disaggregated** trade statistics
  - **UNSD Comtrade** and **Tariff Line** databases as sources
  - Construction of two databases : **BACI** (trade values and quantities) and **TUV** (trade unit values)
  - Issues of discrepancies in trade's declarations and missing quantities
  - Developed for internal use but accessible for external users

1. **The BACI database**: The issues of declarations in UN Comtrade

UN Comtrade information for the trade flow
from **i** to **j** of the product **hs6** the year **t**



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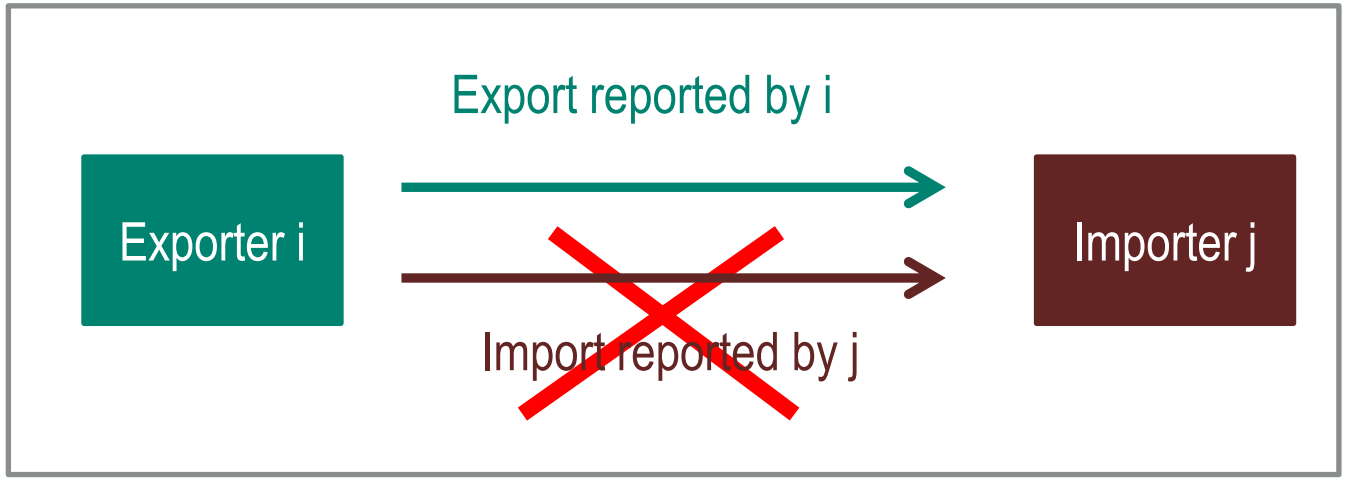

Issue 1 : **missing information**

- some countries do not report at all (up to 170 reporting countries, 245 partners)
- some countries do not report some goods (confidentiality, product aggregation…)

➔ only 43% of flows with **double declarations** (83% of world trade value)

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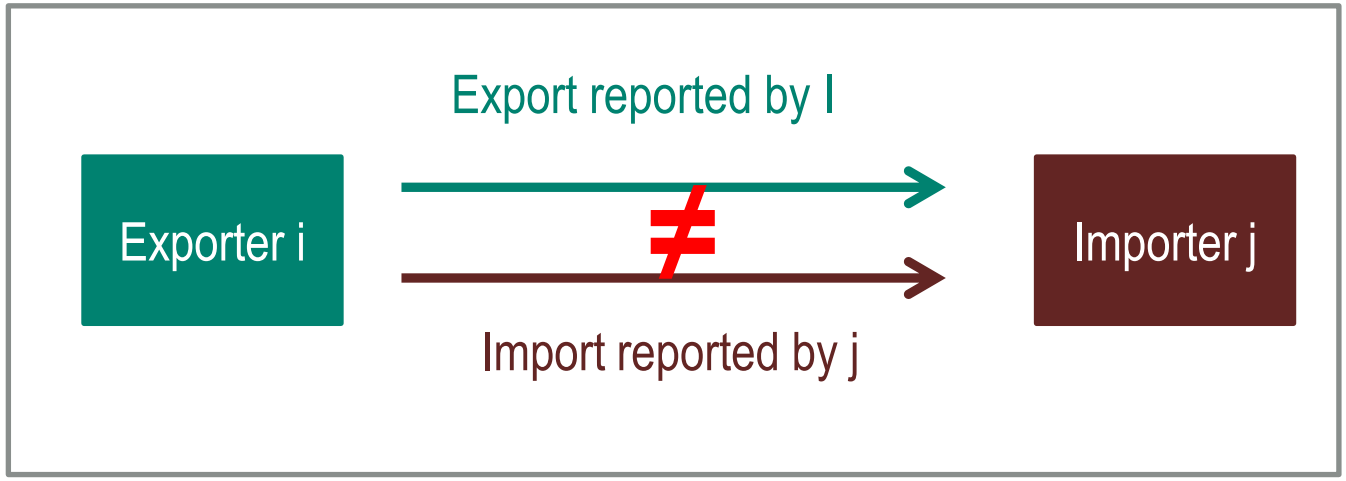

Issue 2 : **Differences in reporting of trade values and quantities**

(Difficulties in the identification of the actual trading partner, confidentiality, different reporting year, product misclassification…)

1. The BACI database:
Comprehensive and reconciled trade values

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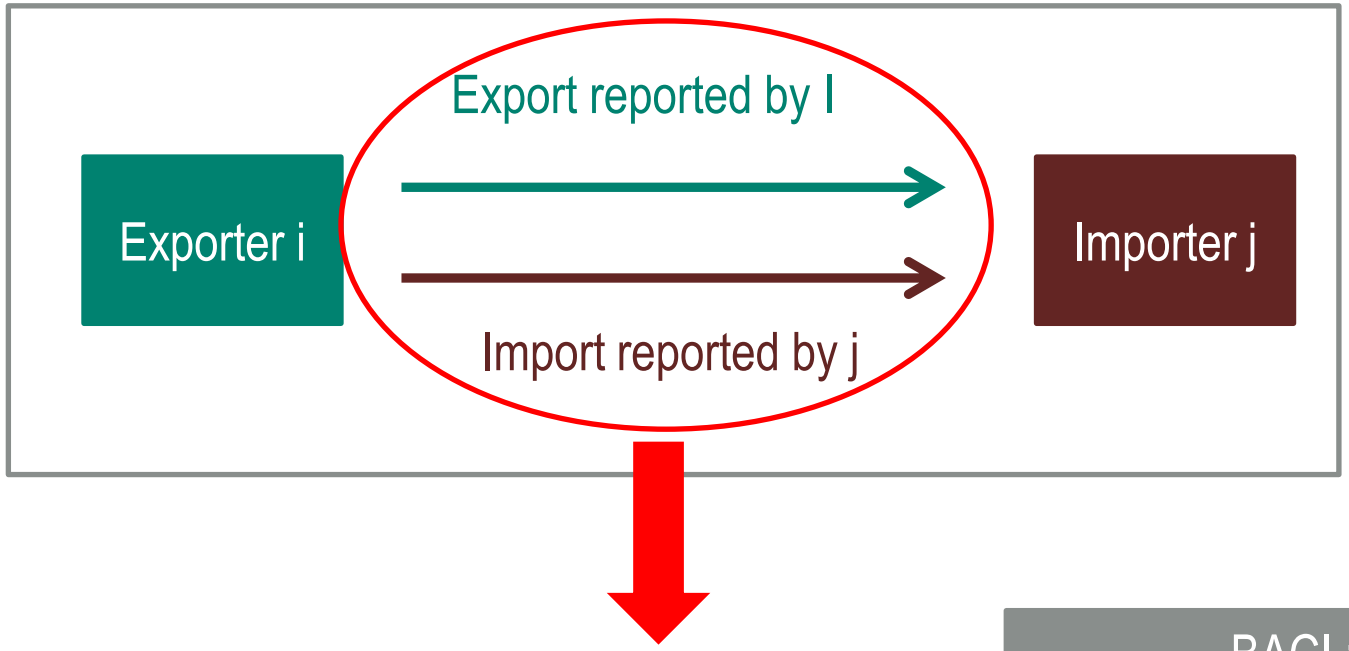

Mirror flow =
Double information
on each trade flow

BACI :
original procedure to
reconcile flows reported
by exporters and importers

1. The BACI database:
Comprehensive and reconciled trade values

BACI Methodology

1. Estimation of **CIF/FOB ratio** using a gravity-type equation to compute FOB import values

2. Evaluation of the **reliability of each country's reporting** (indicator of the reporting distance among partners, cleaned from geographical and sectoral specialization)

3. **Reconciliation of bilateral trade flows** reported twice, using reliability index as weights

➔ BACI : FOB bilateral trade values and quantities

- Large coverage of countries
- More reliable data
- Yearly update
- Available for subscribers to the UN Comtrade database

2. The Trade Unit Values database:
Missing quantities treatment in Comtrade

Approximation of trade prices

$$\text{Unit value}_{ijhs6t} = \frac{\text{value}_{ijhs6t}}{\text{quantity}_{ijhs6t}}$$

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in UN Comtrade :

Computation of missing quantities using values and standard unit values (defined at the world level) to improve the coverage of the database

➔ Reduce the dispersion of unit values and their reliability

2. The Trade Unit Values database:
Missing quantities treatment in Comtrade

$$\text{Unit value}_{ijTLt} = \frac{\text{value}_{ijTLt}}{\text{quantity}_{ijTLt}} \rightarrow \text{Unit value}_{ijhs6t}$$

Trade Unit Values Database

- Use **raw tariff line data** to compute unit values at the highest level of disaggregation

- Only consider **reported quantities**

2. The Trade Unit Values database:
Missing quantities treatment in Comtrade

$$\text{Unit value}_{ijTLt} = \frac{\text{value}_{ijTLt}}{\text{quantity}_{ijTLt}} \rightarrow \text{Unit value}_{ijhs6t}$$

➔ TUV : CIF and FOB bilateral trade unit values

- More reliable data, with higher dispersion
- Yearly update
- 200 countries, more than 5000 products (HS6-digit)
- Free, available on CEPII website

3. **Trade Flows characterization and country profiles**

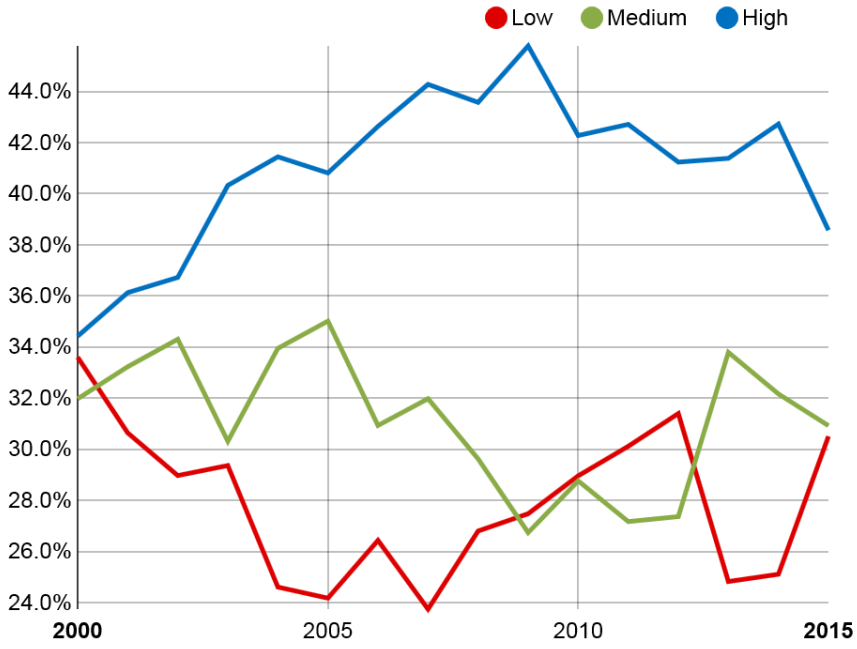
➔ BACI and TUV are used for other CEPII's products

- **The Trade Flow Characterization (TFC) database**
  - Decomposition of trade flows into trade types (trade in differentiated or similar product) and price ranges (low, middle, high range)

- **Country profiles**
  - Interactive data of income level, comparative advantages, product quality range, trade protection … based on CEPII databases
  - Friendly-user illustrations and downloadable data

3. Trade Flows characterization and country profiles

France - 7.A. Exports



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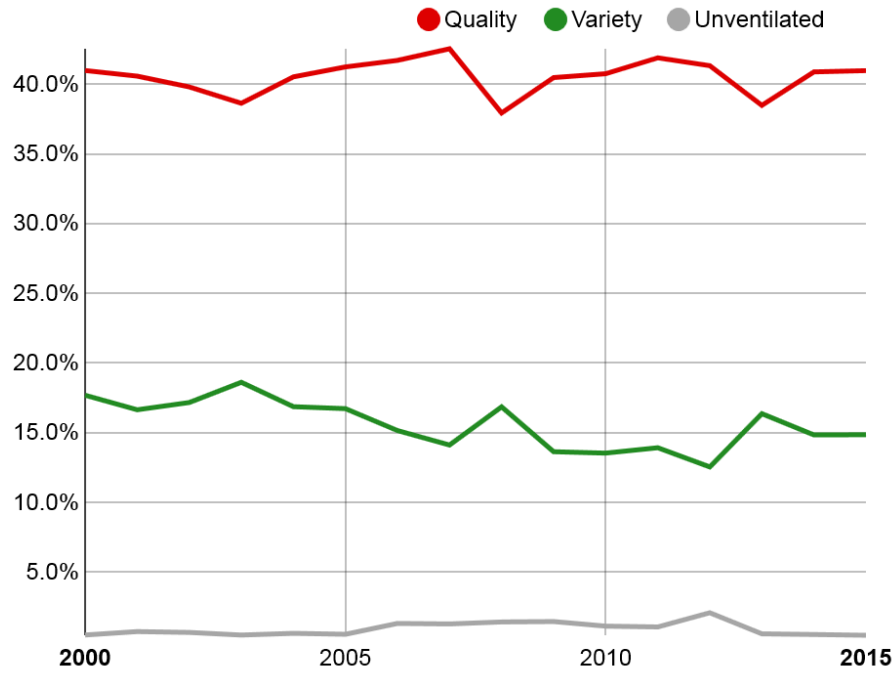
France - 6.B. Two-Way Trade



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