

WITS COUNTRY NETWORK TOOL

How to use it

PRELIMINARY DRAFT

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Country perspective charts

Country Graphs depict the trade network for a selected HS product zooming into a specific country sub-network. More precisely, for a given country i , the graph shows country i 's trade partners (first order connections) and the partners' connections among themselves. Users can choose different products and trade flows. Trade data, may come from two different sources: exporting country declarations or mirror importing country declarations.

Directionality of trade relations can be selected using the available **ViewPoints**: Buyer or Supplier.

Country perspective - View point: Supplier

The Supplier view point shows the main supplier of a given product in the selected country sub-network. The size of each node is proportional to the **Weighted OUT-degree**: in other words the size of each country will reflect his role as supplier of a given product for the other countries in the graph. Note that in order to stress the role of each country as a supplier within the sub-network, the matrix is normalized at the country level. Each entry of the trade matrix W reports the share of the flows from i to j on the overall imports of country j ¹, see the numerical example below. In Table 1 for example AUS is the main supplier in the sub-network (Out-Degree) since it is providing 51% of ARG total imports and 64.7% of AUT total imports.

Table 1: Weighted Directed Trade Matrix – Numerical Example, Country Perspective, Supplier

Dest j \ Origi	ARG	AUS	AUT		OUT-Degree
ARG	0.000	0.383	0.353	→	0.736
AUS	0.510	0.000	0.647	→	1.157
AUT	0.490	0.617	0.000	→	1.107
	↓	↓	↓		
Col Normalized IN-Degree	1	1	1		

¹ More precisely, the trade matrix is column-normalized; the generic entry will be equal to: $\omega_{ij} = \frac{x_{ij}}{\sum_j x_{ij}}$

Country perspective - View point: Supplier – Example

In what follows we present an example of WITS network visualizations – Country Perspective – using the following configuration:

- Nomenclature: HS1988/1992,
- Reporter: Bangladesh
- Year:2010
- Product: 52
- Trade Flow (source): Export
- Threshold²: 0.01
- View Point: Supplier

The following graph depicts Bangladesh sub-network for “Cotton” (Product 52) according to the HS 1988/1992 classification (Nomenclature) for year 2010, based on exporting countries customs declarations (Trade Flow: Export).

Figure 1: Bangladesh trade network for Cotton (HS52) – year 2010 – Main Suppliers

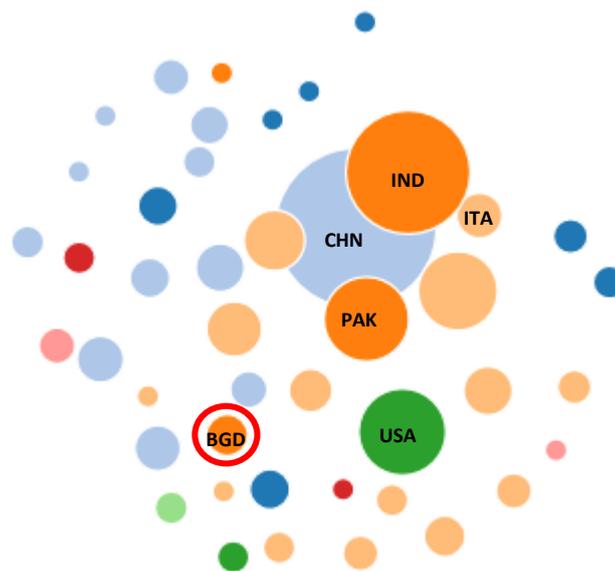


Figure 1 is built using with the option “Show edges” deselected to ease visualization, note that even if links are not shown the position of each node reflect the number and weight of the associated incoming and out-coding edges. Figure 4 shows the main suppliers of cotton for Bangladesh sub-network in year 2010. China is the main source of raw cotton in the sub-network followed by India and Pakistan. Interestingly USA, which is a big exporter of cotton at the global scale (i.e. 13% market share in 2010) is a relatively minor supplier for Bangladesh neighborhood.

² To improve the readability of the graph, only the elementary flows from i to j that represent at least 1% of country j overall imports are shown.

Country perspective - View point: Buyer

The Buyer view point shows the main destination markets of a given product in the selected country sub-network. The size of each node is proportional to the **Weighted IN-degree**: in other words the size of each country will reflect his role as buyer of a given product for the other countries in the graph. Note that in order to stress the role of each country as a destination market within the sub-network, the matrix is normalized at the country level. Each entry of the matrix W reports the share of the flows from i to j on overall exports of country i^3 , see the numerical example below. In Table 2 for example ARG is the main destination market in the sub-network (In-Degree) since it is absorbing 74% of AUS total exports and 77.4% of AUT total exports.

Table 2: Weighted Directed Trade Matrix – Numerical Example, Country Perspective, Buyer

Dest j \ Origi	ARG	AUS	AUT		Row Normalized OUT- degree
ARG	0.000	0.476	0.524	→	1
AUS	0.740	0.000	0.260	→	1
AUT	0.774	0.226	0.000	→	1
	↓	↓	↓		
IN-Degree	1.513	0.702	0.785		

Country perspective - View point: Buyer – Example

In what follows we present an example of WITS network visualizations – Country Perspective – using the following configuration:

- Nomenclature: HS1988/1992,
- Reporter: Bangladesh
- Year:2010
- Product: 62
- Trade Flow (source): Export
- Threshold⁴: 0.01
- View Point: Buyer

³ More precisely the trade matrix is row-normalized; the generic entry will be equal to: $\omega_{ij} = \frac{x_{ij}}{\sum_i x_{ij}}$

⁴ To improve the readability of the graph, only the elementary flows from i to j that represent at least 1% of country i overall exports are shown.

The following graph depicts Bangladesh sub-network for Articles of apparel, accessories, not knit or crochet” (Product 62) according to the HS 1988/1992 classification (Nomenclature) for year 2010, based on exporting countries customs declarations (Trade Flow: Export).

Figure 2: Bangladesh trade network for Apparel (HS62) – year 2010 – Main Buyers

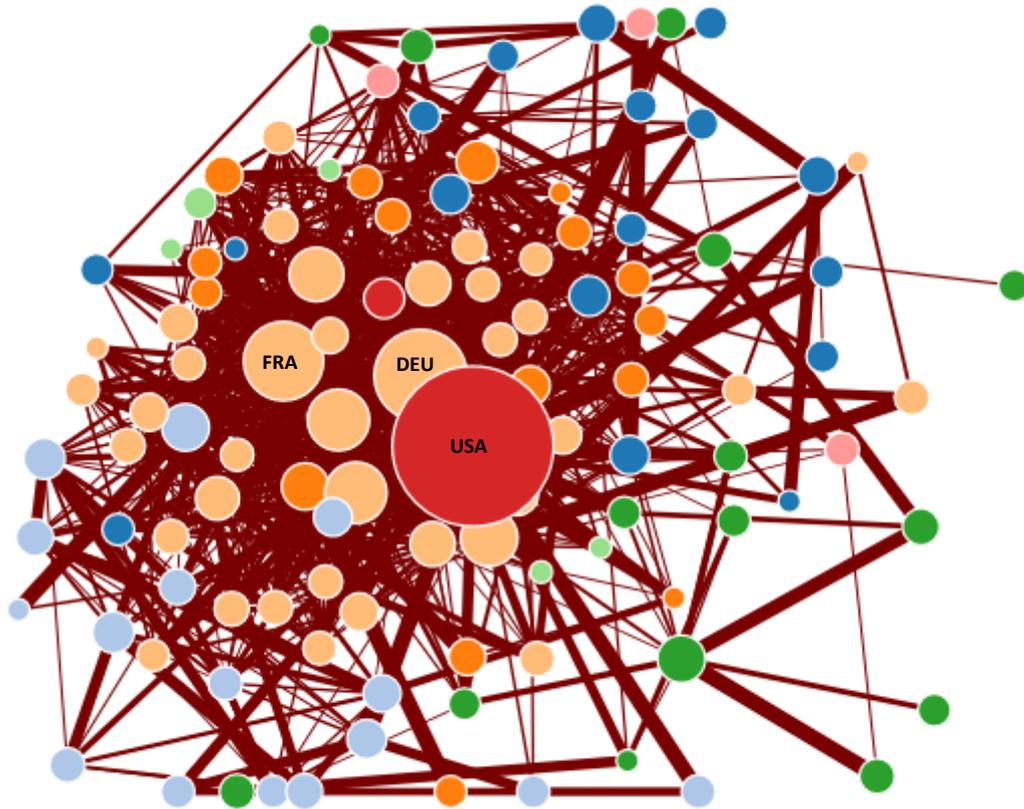


Figure 2 reports the main buyers of Apparel products (using the option “show edges”) USA is by far and large the main destination market for apparel products both globally and for Bangladesh neighborhood (followed by Germany and France), the other European countries (depicted in beige and clustered at the center) are also important markets.