**FIT3179 Data Visualisation Project 2**

1. **URL to my visualisation**

<https://tripster103.github.io/FIT3179/vis2/>

1. **URL to my Five Design Sheets**

<https://tripster103.github.io/FIT3179/sheets/>

1. **Information regarding my visualisation**
2. **Domain, Why and Who**

**Domain**  
This project visualises Australia’s international trade, highlighting imports and exports of goods by partner country and by industry category. It helps users understand *what* Australia trades, *who* it trades with, and *how* the composition of trade has evolved over time. The dashboard transforms complex macro-economic tables into clear, interactive views that reveal both geographic and structural trade patterns.

**Why**Australia’s economy is strongly linked to global trade – particularly within the Asia-Pacific region. This visualisation lets users explore the balance between resource exports and manufactured imports, revealing how rural and non-rural sectors contribute differently to national trade. Dividing categories this way underscores the contrasting roles of agriculture and industry in shaping Australia’s economic identity.

**Who**The visualisation targets students, researchers, policy analysts, and the general public – anyone seeking an intuitive way to explore credible trade data without reading raw spreadsheets. Academics and professionals can also use it to examine long-term changes in partner relationships and commodity structures.

1. **What – Data, Sources, and Processing**

**Sources: Australian Bureau of Statistics (ABS), 2025**

* *Trade Flow Map:* *Australian Bureau of Statistics (2025), International Trade: Supplementary Information, Calendar Year,* released 29 April 2025.
  + Table 1 – Merchandise exports, by selected countries, by six-month aggregates, FOB value ($ m)
  + Table 2 – Merchandise imports, by selected countries, by six-month aggregates, customs value ($ m)
* *Goods Exports Over Time:* *Australian Bureau of Statistics (2025), International Trade in Goods,* released 2 October 2025.
  + Table 3 – Goods credits, original, current prices
* *Goods Imports Over Time:* *Australian Bureau of Statistics (2025), International Trade in Goods,* released 2 October 2025.
  + Table 4 – Goods debits, original, current prices

**Attributes:**

* Year (Ordinal)
* Country / Partner (Nominal)
* Trade Type (Import or Export, Nominal)
* Category (Nominal)
* Rural vs Non-rural (Nominal)
* Trade Value in $AUD (Quantitative)

**Processing:**

CSVs were generated from ABS data, cleaned and reshaped in Python (convert\_csv\_to\_json.py). Six-month periods were aggregated to annual totals, converted to $B, and filtered (2019–2024 ≥ $5 B). Geographic features use Natural Earth TopoJSON. Great-circle curves were computed (make\_curved\_flows\_clip\_topo.py) to plot origin–destination lines cleanly on an Equal Earth projection in circular arcs, with manual formatting for lines between Australia and USA.

1. **How – Visual Design, Marks, and Channels**

**1. Trade Flow Map (Vega-Lite)**

Marks: Curved lines between Australia (origin) and partner countries.

Channels:

* Line width → Trade value ($ B AUD)
* Colour hue → Trade type (orange = exports, blue = imports)

Purpose: Reveals geographic patterns and key partners (e.g., China, Japan, South Korea, USA, India).

Interaction: Year slider and “Min Trade Value ($B)” slider filter visible flows; toggle switches import/export mode. A custom JavaScript controller links Vega Lite signals to dynamic country highlighting and map colouring. Hovering over a country reveals key imports and exports.

Purpose: Reveals geographic patterns and key partners (e.g., China, Japan, South Korea, USA, India).

**2. Stacked Area Chart — Goods Exports Over Time**

Marks: Stacked polygons (areas) for each export category.

Channels:

* Vertical position → Export value ($ M AUD)
* Colour hue → Category
* Horizontal position → Year

Purpose: Shows how export composition evolved from 2010 onwards, highlighting growth in *metal ores* and *coal* as dominant sectors, as well as changes and trends over time.

Interactions: Tooltips display exact values and dates. Hovering reveals category definitions and percent shares.

**3. Stacked Area Chart — Goods Imports Over Time**

Marks: Same as exports chart, applied to import categories.

Channels: Same as exports chart, applied to import categories

Purpose: Shows how import composition evolved from 2010 onwards, highlighting growth in *metal ores* and *coal* as dominant sectors, as well as changes and trends over time.’

Interactions: Tooltips display exact values and dates. Hovering reveals category definitions and percent shares.