

ANALYSIS OF GLOBAL COMMODITY TRADE DATA

1. Dataset Selection and Source

- **Dataset Description:** The dataset comprises international trade data, including meats, dairy, livestock, etc. It includes details like country/area, year, commodity codes, commodity descriptions, trade flow (export, import, re-import), trade value in USD, weight in kilograms, quantity, and trade category.
- **Source:** Our project will utilize a comprehensive dataset published by the United Nations Statistics Division, available on the UNData website.
<http://data.un.org/Explorer.aspx>

2. Preliminary Analysis or Observations

- We decided to filter the data and look at three countries specifically: the USA, Canada, and Australia. After cleaning and combining the datasets, we discovered several preliminary insights. The dataset contains a total of 59,090 records. There are 441 unique commodities, from a wide range of goods. The dates span from 1988 to 2016, only years not specific months.
- Looking at the data, one insight/prediction is that since the U.S. has become more reliant on outsourcing and getting goods at cheaper prices, we expect imports for most commodities to increase for the U.S. over time.
- Also, since the U.S. has a higher population and GDP than the other countries we are looking at, we expect the total value of goods traded to be highest compared to Canada and Australia.
- The Australia-United States Free Trade Agreement (AUSFTA) began in January 2005. We expect exports from Australia to increase a significant amount after 2005 since the U.S. is such a larger importer and restrictions were lifted.
- Given the North American Free Trade Agreement (NAFTA) of 1994 and the proximity of the U.S. and Canada, this should lead to more economic imports and exports for both parties involved. Thus, we should see a drastic increase in the overall trade between the US and Canada.
- Since the U.S. is such a large producer of corn, we expect the U.S. to be the largest exporter of corn products.
- We expect to learn more about the imports, exports, reimports, and trade surplus/deficits for each country in our dataset.

3. Intended Visualization Techniques/Tools

- **Trade Trends Over Time:** Using line or bar charts to show yearly trade trends.

- **Top Trading Countries:** A map visualization highlighting key trading nations with color-coded trade volumes.
- **Commodity Analysis:** Bar or pie charts detailing the most traded commodities.
- **Global Trade Heat Map:** Showcasing import and export volumes by country.
- **Time Series Analysis:** Showcasing how trade volumes have evolved over time for key commodities and countries.

4. Expected Challenges

- **Data Volume and Complexity:** Managing and processing a large dataset with multiple variables.
- **Data Accuracy and Completeness:** Ensuring the dataset is free from errors and missing values.
- **Effective Visualization:** Creating clear, informative visualizations that convey complex data insights.
- **Performance Optimization:** Ensuring Tableau dashboards are optimized for performance, especially with large datasets.