US agriculture Imports and Exports 1990-2023 Analysis

Introduction:

The project is about US agriculture Exports and Imports from 1990 to 2023 analysis. I downloaded the required data from data.gov in a separate four excel files and then cleaned and transformed the data. Then I have used python code to fill missing values and exported the data into csv files. Then created tables in PostgreSQL and performed calculations and analysis using queries. Then used all the final data into tableau for visualization and dashboards.

Goal of the Project:

The main goal of the project is to determine whether trade deficit occur. Which commodity was exported or imported the most to US. To which country or region, US has exported the most or has imported from them.

Data source:

There are a lots of data sources but I have downloaded the data from https://data.gov/
That is US government website build for data.

Original and cleaned excel files:

I have downloaded the original files from data.gov. These files are located in original_files folder:

1. us_commodity_exports_destinations_original.xlsx
2. us_commodity_exports_original.xlsx
3. us_commodity_imports_original.xlsx
4. us_commodity_imports_sources_original.xlsx

I have cleaned, transformed and converted these files into excel sheets
These are:

1. analysis_5yr.xlsx
2. analysis_multiple_sheets.xlsx
3. destinations_since_2019.xlsx
4. European_union.xlsx
5. Sources_since_2019.xlsx
6. us_agriculture_exports.xlsx
7. us_agriculture_exports_destinations.xlsx
8. us_agriculture_imports.xlsx
9. us_agriculture_imports_sources.xlsx

Python and PostgreSQL files

I have used Python code and its libraries (Pandas, csv, openpyxl) to fill any missing values and export data into csv files for ease. The sources codes are mentioned in python_files folder with 2 files.

I have created tables in PostgreSQL and imported all the required data into it. Then performed analysis on it and exported the result into csv files. The source codes are mentioned in postgresql_files folder with 16 files.

Tableau files:

Uploaded all the data whether excel or csv into Tableau interface to perform visual analysis. Build charts, graphs, geo maps, and dashboards. The files are mentioned in tableau_files folder with 10 separate files.

Analysis:

- Conducted comprehensive analysis of US agriculture trade data spanning from 1990 to 2023, utilizing advanced statistical methods and data visualization techniques to identify trends, patterns, and factors contributing to trade deficits.
- As a detail-oriented and creative problem solver, analyzed datasets with accuracy and wrote SQL queries that found solutions to business problems.
- The methods and techniques employed in the project are data cleaning, data sorting, data wrangling, and data visualization. The tools used are Microsoft Excel, Python, PostgreSQL, and Tableau.
- Analyzed the effects of COVID-19, market competition, inflation, and domestic food consumption on agriculture trade. Performed qualitative data analysis.