

WIREFRAME **DOCUMENTATION**

DELOITTE CASE STUDY

Homepage:



Overview:

Problem Statement

The project involves analyzing time-series data for the Consumer Price Index (CPI), Exchange Rate, and Exports (in millions) for 200 countries, sourced from "The World Bank" website. The data is unstructured and requires proper organization and analysis. The goal is to derive insights from the data, create a dynamic and interactive dashboard.

Objective

Data Structuring and Insight Generation: Organize and structure the unstructured dataset, and extract valuable insights from the data.

Dashboard Development: Create a dashboard that includes slicers for country and time period (monthly, quarterly, yearly) with trend analysis for Exchange Rate, CPI, and Exports on a single tab.

YoY and CAGR Analysis: Perform Year-on-Year (YoY) and Compound Annual Growth Rate (CAGR) analysis on the dataset to understand the growth trends.

Graphical Representation and Interactivity: Develop dynamic graphical representations of the data, ensuring they update when slicers are applied for country and time period.

Data Cleaning and Deduplication: Remove redundancies and erroneous results from the dataset to ensure clean and accurate data for analysis.

Tools Used

Python (Pandas)

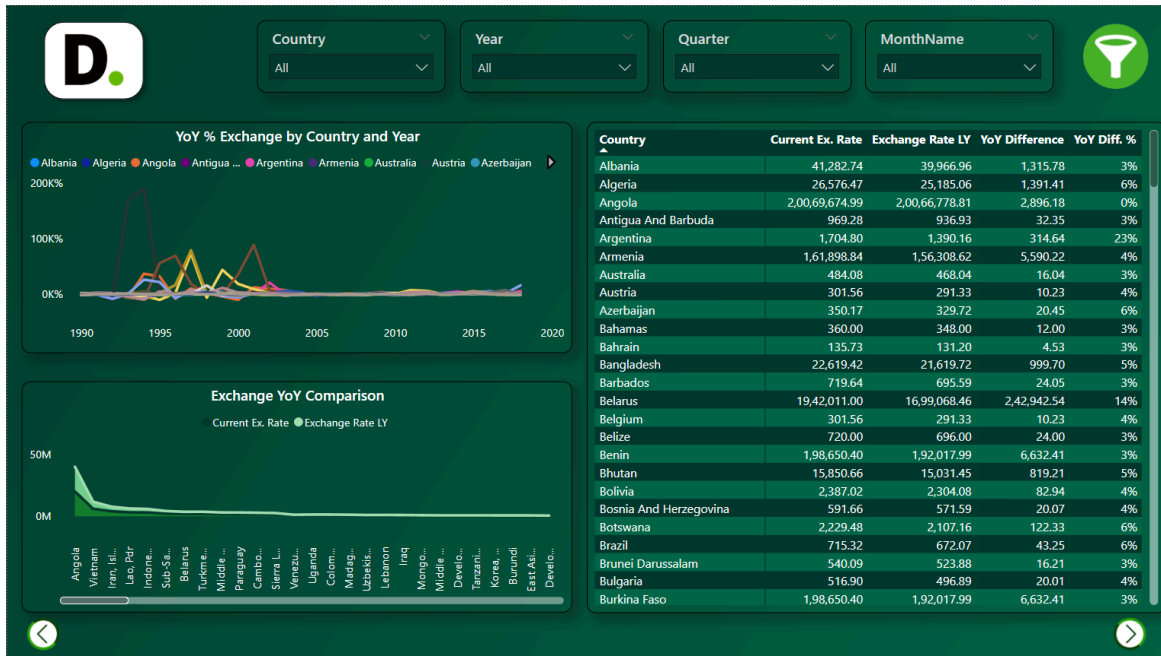
Microsoft Excel

Microsoft Power BI

This is our overview



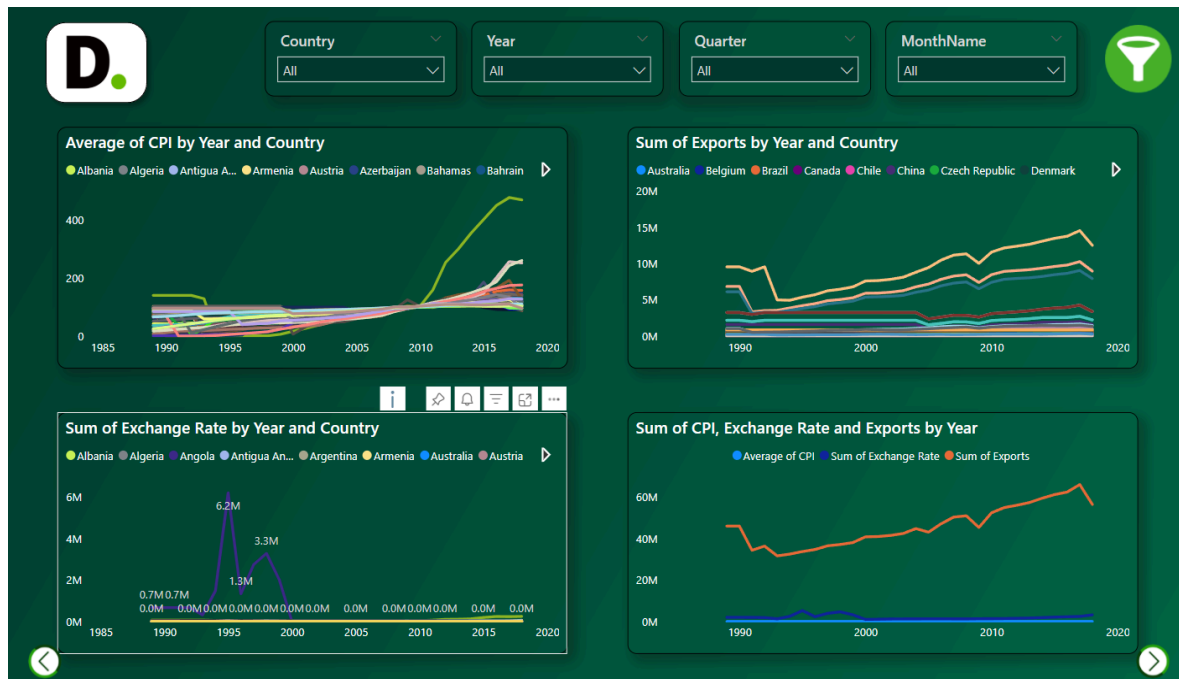
This is the CPI of every country from the year 1989 to 2018.



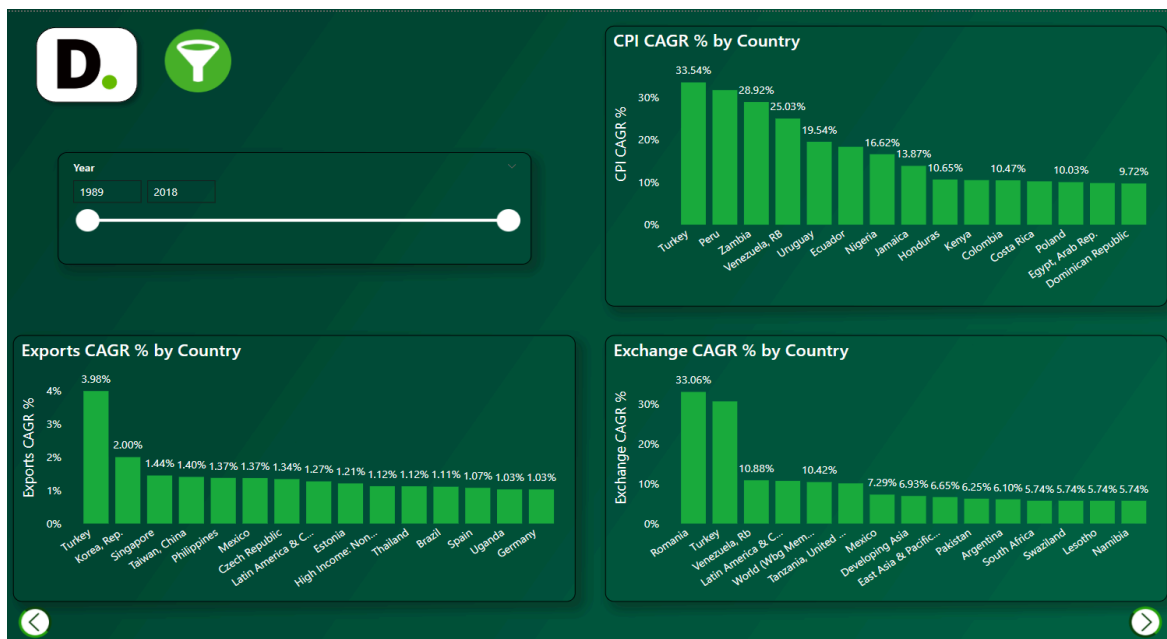
This is the Exchange Rate of every country from the year 1989 to 2018.



This is the Export Merchandise of every country from the year 1989 to 2018.



This is the CAGR CPI of every country from the year 1989 to 2018.



This is the CAGR of CPI, Exchange Rate and Exports Merchandise of every country.

Insights

➡ Brazil has the highest year-over-year (YOY) Consumer Price Index (CPI) rate, while the High Income Non-OECD countries have the highest YOY export merchandise. Angola has the highest YOY exchange rate.

➡ On the other hand, the Russian Federation has the highest compound annual growth rate (CAGR) CPI rate, Turkey has the highest CAGR export merchandise, and Venezuela's Real Bolivar (RB) has the highest CAGR exchange rate.

➡ The average value of the CPI rate is 89.29, the average value of export merchandise is 72.37K, and the average value of the exchange rate is 670.05.

➡ To control inflation in countries like Brazil and Armenia, which experienced peak inflation rates in the 1993-1994 period, the governments implemented various measures. These measures included pursuing a contractionary monetary policy, which involved reducing the money supply within an economy by increasing interest rates. This made credit more expensive, effectively controlling inflation.

These are some insights from the project.

Insights



On the other hand, fluctuations in a country's exchange rate significantly impact its exports and inflation rates, especially for nations where a substantial portion of their trade is denominated in foreign currencies.



For instance, in Australia, the exchange rate fluctuated from 7% in 1997 to 17% in 1998. This change led to a decline in the total number of exports. While the year 1997 witnessed a 7.16% YoY growth in exports, the growth rate in 1998 dropped to only 0.32%.



A higher exchange rate also leads to an increase in a country's inflation rate. For example, Bangladesh experienced its highest inflation rate of 10% in 2010. However, after the exchange rate began to decrease, the currency strengthened, leading to a decline in inflation.



In contrast, the United States and China have demonstrated remarkable success in maintaining a stable inflation rate, consistently hovering between 2% and 4% for over a decade.



Turkey stands out with the highest CAGR in exports, indicating a significant increase in its exports compared to its initial level in 1989. Turkey's exports grew from -2.49 in 1989 to 267K in 2018, with a remarkable CAGR of 37%.



These are the insights from the project.