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Visualization Tableau CA -1

Q-1 Description of your dataset: what is it? Provide basic domain information, including a description of each column.

Ans- Inflation is the rate at which the general level of prices for goods and services rises, resulting in a decrease in the purchasing power of a currency. It is usually measured using various consumer price indices (CPI) or producer price indices (PPI). Here are some insights about inflation trends from 1970 to 2021:

1970s: Global "Great Inflation" due to oil price shocks, wage-price spirals, and expansionary monetary policies.

1980s: Inflation stabilized in developed economies, but volatility continued in some developing countries.

1990s-2000s: Moderate and stable inflation due to improved economic policies, globalization, and technological advancements.

2008-2009: Global financial crisis led to a deflationary impact; central banks used expansionary monetary policies.

2009-2012: Low inflation post-financial crisis, central banks implemented accommodative policies.

2013-2015: Inflation picked up in some regions, and central banks monitored and adjusted policies.

2016-2019: Inflation generally subdued, influenced by technology, globalization, and aging demographics.

2020-2021: COVID-19 pandemic caused widespread deflationary pressures; central banks implemented expansive policies.

Food Price Inflation: Influenced by weather, crop yields, and supply-demand dynamics, leading to spikes and fluctuations.

Energy Price Inflation: Crude oil prices and geopolitical events impacted inflation trends, causing fluctuations.

Producer Price Index (PPI): Reflects producer cost pressures, and can indicate future consumer price inflation, affected by input costs and supply chain disruptions.

Q-2 - Comprehensive statement of the objectives you want to achieve with this dataset: e.g., who it's for and what you want to show.

Ans - Objective: Provide a comprehensive historical record of inflation rates (CPI, food and energy inflation, PPI) across countries and regions from 2000 to 2022. Help analyze inflation trends, identify

inflationary pressures, and study economic events' impact on price stability. Interactive visualizations allow exploration at different granularities, aiding users in understanding historical inflation patterns, and economic challenges, and informing fiscal and monetary policies, investment strategies, and financial planning.

Visualizations:

Global Inflation Overview: Country Map chart displaying overall global CPI from 2000 to 2022, highlighting significant inflationary periods.

Regional Inflation Comparison: Bar chart or map showing inflation rates for regions (North America, Europe, Asia) over time, facilitating regional inflation comparison.

Food and Energy Price Inflation: Square charts depicting inflation rates for food and energy from 2000 to 2022, showing their impact on overall inflation.

Producer Price Inflation: Bar chart illustrating PPI changes over time, providing insights into input costs and potential consumer price inflation.

Q-3- Step-by-step of the process you took in turning this data into a visualisation, with screenshots used appropriately.

Ans - Downloaded the data set in Excel from the World Bank.org site of the Global database of inflation with different sectors hitting inflation like food, producer, and energy price inflation which covers up to 209 countries over the period of 1970- 2022.

Made sure the data is in a compatible format for Tableau. Tableau supports various file types, such as Excel, CSV, etc.

Ensured that the inflation data is organized in rows and columns, with headers for each column.

In Tableau Desktop, clicked on "Connect" in the top-left corner, and a new window appeared with data connection options.

Once the data was loaded into Tableau, I started creating visualizations by dragging and dropping data fields onto the shelves and selecting chart types from the "Show Me" pane.

Combined the visualizations to create an interactive dashboard by dragging and dropping them onto the dashboard canvas and saved the workbook from the file menu as save.

Q-4- Justifications for your choice of visualization technique – why did you use one software over another? Why did you choose the particular charts you made?

Ans- Tableau and Power BI both are known for their intuitive user interface and ease of use, making them popular among users who are new to data visualization. But personally, I found Tableau's easy features to upload data, and certain chart types like the country map, square chart, and more, which I thought will clearly show and represent data as I wanted it to show, making it simple and easy to understand.

My choice of specific visualization techniques was depending on the nature of the data and the insights for ex-Country Choropleth maps are great for visualizing geographic data, such as country-specific metrics. They allow users to quickly identify high and low values for a specific variable, making it an excellent choice for displaying inflation rates in different countries.

Q-5-Conclusions: What you found – including your reflections on the challenges of working on this project? What would you do differently if you were starting it over today?

Ans- Conclusion- Providing a comprehensive historical record of inflation rates through interactive visualizations can offer valuable insights into economic trends and inform decision-making.

Challenges:

Data Quality, Consistency, and Availability.

Data Cleaning and Preprocessing.

Interactivity Implementation.

Scope and Granularity of Visualizations.

Keeping Visualizations Informative with Clear Annotations and Legends.

What to Do Differently:

Real-Time Data Integration: Incorporate real-time data updates and integration to keep the visualizations current and relevant.

Collaboration and Feedback: Involve domain experts, economists, and stakeholders throughout the project to gather feedback and ensure the visualizations address their needs effectively.

Machine Learning for Forecasting: Integrate machine learning algorithms to forecast future inflation trends and provide users with predictive insights.

Automated Data Pipelines: Implement automated data pipelines to handle data updates and reduce manual intervention in data preprocessing.