1. Introduction

1.1 Project Overview

The project titled "**Power BI Inflation Analysis: Journeying Through Global Economic Terrain**" is a comprehensive analysis aimed at understanding global inflation trends. The main goal is to convert raw inflation data from multiple countries into interactive visual reports using Power BI. The project focuses on visualizing inflation data to help interpret complex economic conditions and trends, making them understandable to policymakers, educators, and general users.

1.2 Objectives

- To collect historical inflation data from reliable sources.
- To clean and preprocess the data for consistency and usability.
- To build DAX measures for statistical insights such as average, minimum, and maximum inflation.
- To develop region- and country-specific inflation visualizations.
- To create an engaging, interactive dashboard in Power BI.

2. Project Initialization and Planning Phase

2.1 Define Problem Statement

Inflation data, though available, is often scattered, inconsistent, and difficult to interpret for non-technical users. This makes it hard to derive meaningful conclusions, especially at the global level. The lack of a centralized and visualized platform for inflation insights leads to a gap in data-driven decision-making. Our project addresses this gap by transforming historical inflation data into an easily explorable dashboard.

2.2 Project Proposal (Proposed Solution)

We propose to use Power BI to create an end-to-end inflation analysis solution. This includes sourcing data, preprocessing it for analysis, designing multiple dashboards, and deriving actionable insights. Our approach involves region and year-wise comparison, inflation categorization, and identification of trends using calculated measures.

2.3 Initial Project Planning

- **Team Members:** Dhruv
- **Tools Used:** Power BI, Excel, Power Query
- **Timeline:** 16 June 2025 - 26 June 2025
- **Milestones:**
    - Sprint 1: Data Cleaning
    - Sprint 2: Data Modeling and Measures
    - Sprint 3: Dashboard Design
    - Sprint 4: Final Testing and Report Compilation

3. Data Collection and Preprocessing Phase

3.1 Data Collection Plan and Raw Data Sources Identified

The dataset was obtained from publicly available sources such as Kaggle and the IMF. It included inflation data for over 190 countries, spanning multiple decades.

3.2 Data Quality Report

Several issues were addressed during data cleaning:

- Unpivoted year columns for better structuring.
- Cleaned inconsistent formats in the inflation rate column.
- Added region codes to group countries.
- Introduced new columns like Index, Inflation Status, and Inflation Category.

3.3 Data Exploration and Preprocessing

- Year columns were unpivoted into one.
- Region, Category, and Status columns were created.
- Data types were corrected for modeling.
- All preprocessing was done using Power Query in Power BI.

4. Data Visualization

4.1 Framing Business Questions

1. What is the average global inflation rate?
2. Which countries have extreme inflation (high/low)?
3. Which region had the most inflation overall?
4. How has inflation changed over the years?
5. How many countries are categorized into each inflation level?
6. Which region experienced the most stable inflation?
7. Which year recorded the highest inflation?
8. Which countries contribute the most to inflation?

4.2 Developing Visualizations

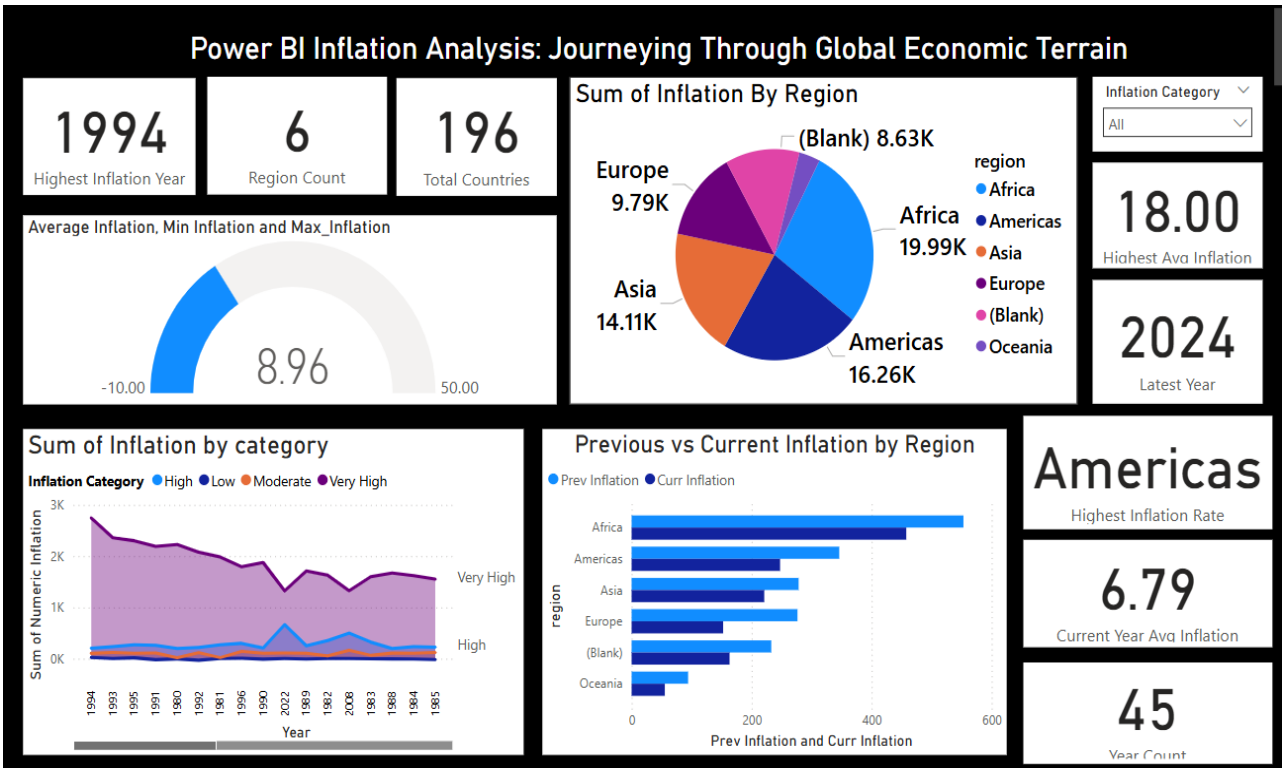
Visualizations developed in Power BI:

- KPI Cards showing latest year, average inflation, region count.
- Pie and Bar Charts for region-wise and year-wise analysis.
- Gauge Chart for global average inflation.
- Map Chart highlighting inflation by region.
- Tree Map showing inflation values country-wise.
- Area Chart showing inflation by category over years.

5. Dashboard

5.1 Dashboard Design File

- **Page 1:** Summary view with slicers and metrics.
- **Page 2:** Geographical view and insights.
- Clear layout using intuitive charts and cards.
- Applied contrasting themes and interactive filters.
- Drill-down options added for deep analysis.



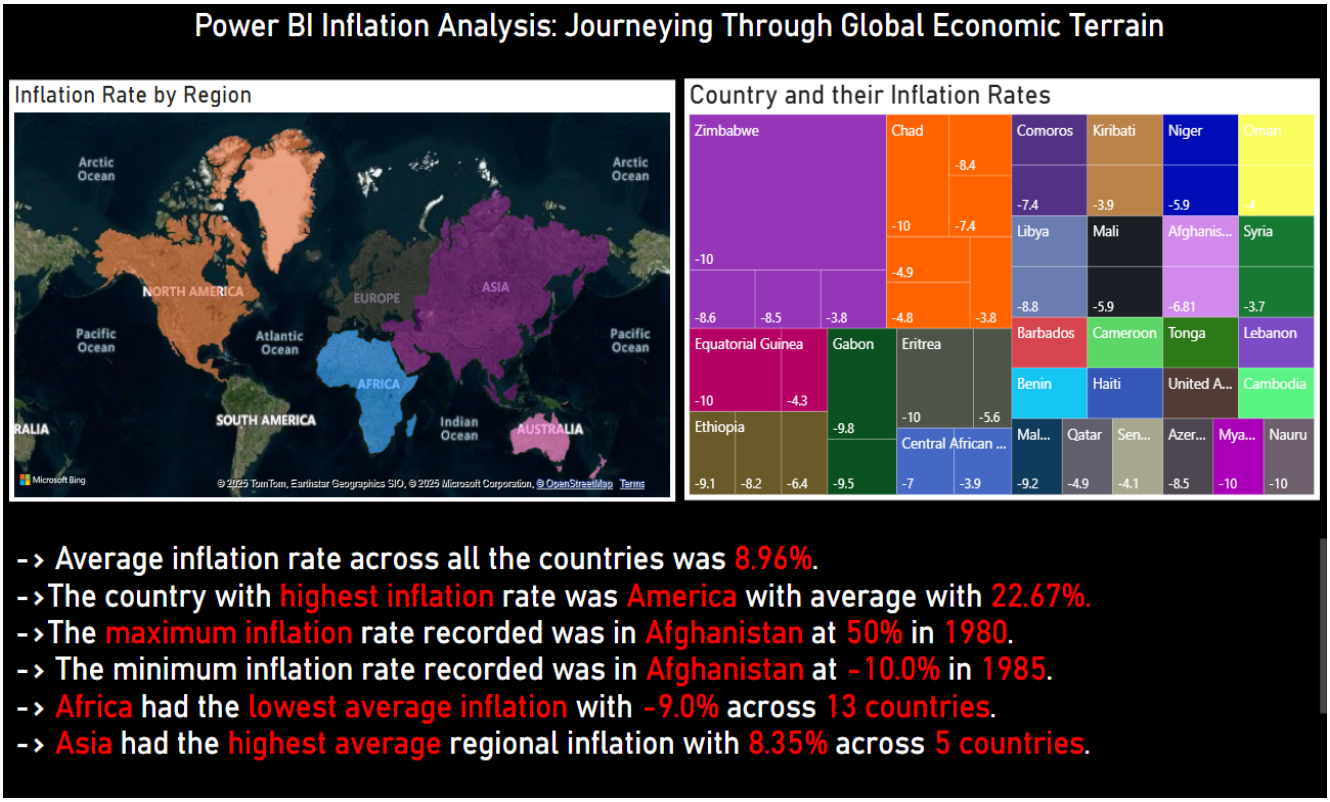
6. Report

6.1 Story Design File

The report highlights these key findings:

- Global average inflation: 8.96%
- Highest average inflation: America (22.67%)
- Max inflation: Afghanistan (50% in 1980)
- Min inflation: Afghanistan (-10% in 1985)
- Lowest average by region: Africa (-9%)
- Highest average by region: Asia (8.35%)

Color-coded visuals emphasize high and low inflation patterns



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7. Performance Testing

7.1 Utilization of Data Filters

- Filters for Year, Region, and Inflation Category
- Cross-visual interactions enabled

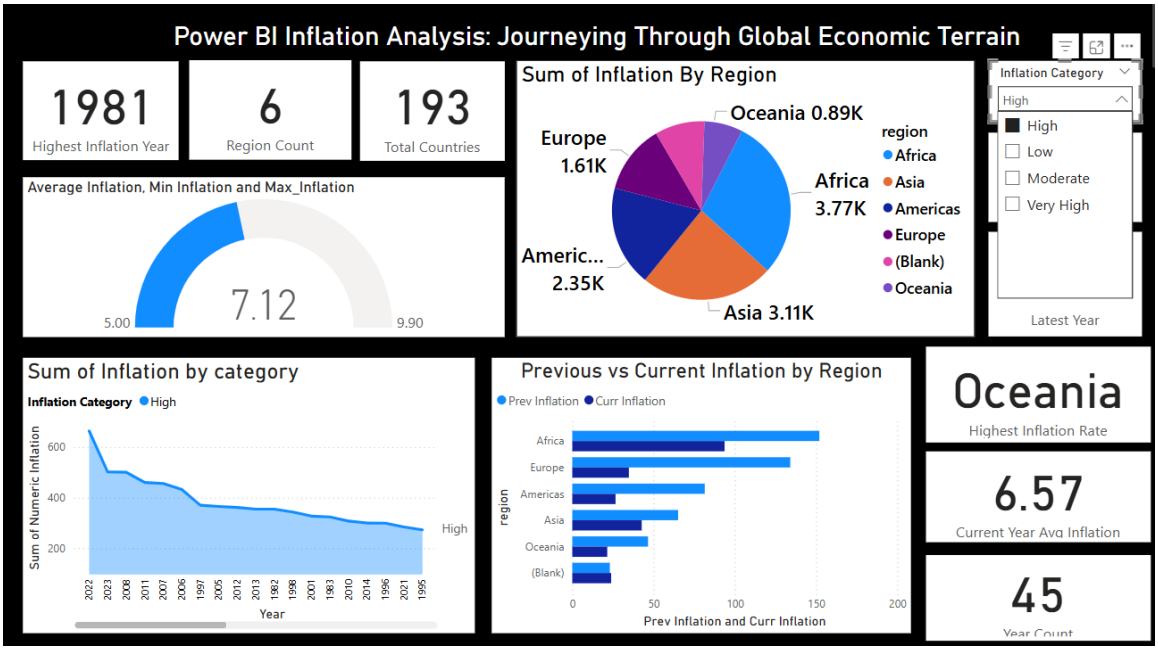
7.2 Number of Calculation Fields

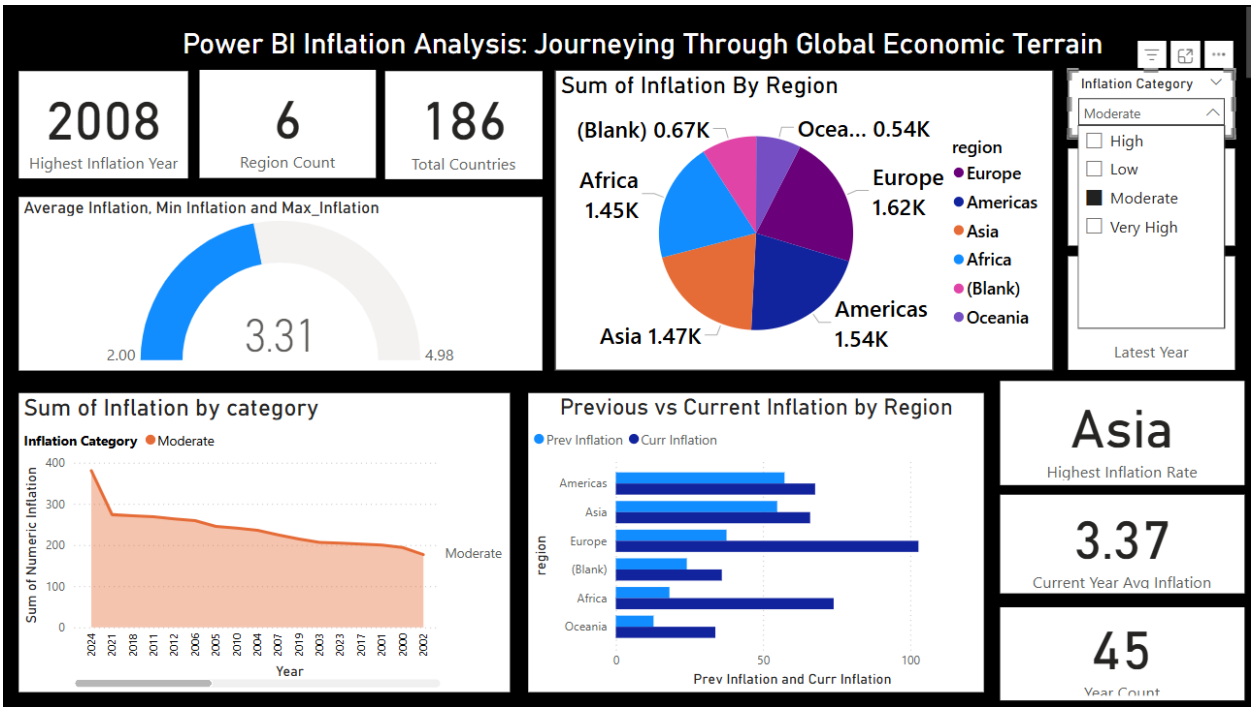
Created multiple DAX Measures:

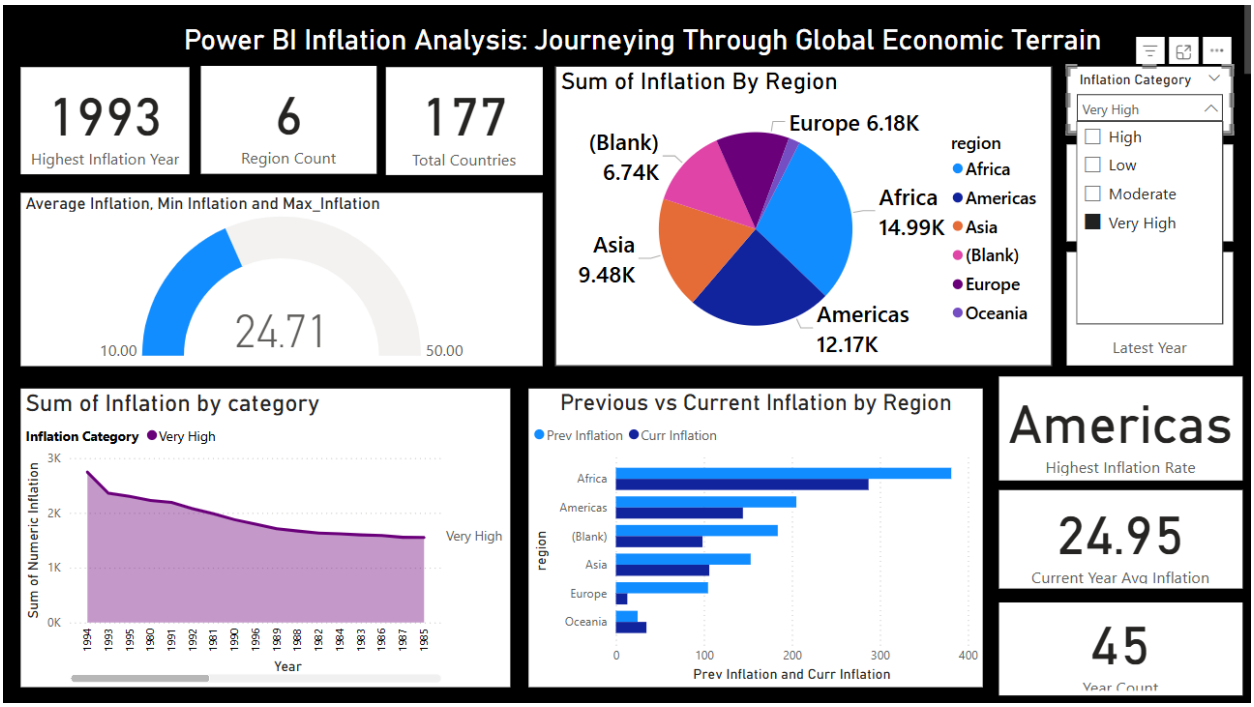
- Average Inflation Rate
- Max/Min Inflation
- Current vs Previous Year Inflation
- Inflation Status
- Country/Region Count

7.3 Number of Visualizations

- 12+ visuals
- All visuals are connected with filters
- Easy exploration of trends and outliers




Power BI Inflation Analysis: Journeying Through Global Economic Terrain
2008
Highest Inflation Year
6
Region Count
186
Total Countries
Average Inflation, Min Inflation and Max_Inflation
2.00
3.31
4.98
Sum of Inflation By Region
(Blank) 0.67K
Ocea... 0.54K
Africa 1.45K
Europe 1.62K
Asia 1.47K
Americas 1.54K
region
Europe
Americas
Asia
Africa
(Blank)
Oceania
Inflation Category
Moderate
High
Low
Moderate
Very High
Latest Year
Sum of Inflation by category
Inflation Category Moderate
Sum of Numeric Inflation
Year
Moderate
Previous vs Current Inflation by Region
Prev Inflation
Curr Inflation
region
Americas
Asia
Europe
(Blank)
Africa
Oceania
Prev Inflation and Curr Inflation
Asia
Highest Inflation Rate
3.37
Current Year Avg Inflation
45
Year Count


Power BI Inflation Analysis: Journeying Through Global Economic Terrain
1993
Highest Inflation Year
6
Region Count
177
Total Countries
Average Inflation, Min Inflation and Max_Inflation
10.00
24.71
50.00
Sum of Inflation By Region
Europe 6.18K
(Blank) 6.74K
Africa 14.99K
Asia 9.48K
Americas 12.17K
region
Africa
Americas
Asia
(Blank)
Europe
Oceania
Inflation Category
Very High
High
Low
Moderate
Very High
Latest Year
Sum of Inflation by category
Inflation Category Very High
Sum of Numeric Inflation
Year
Very High
Previous vs Current Inflation by Region
Prev Inflation
Curr Inflation
region
Africa
Americas
(Blank)
Asia
Europe
Oceania
Prev Inflation and Curr Inflation
Americas
Highest Inflation Rate
24.95
Current Year Avg Inflation
45
Year Count

8. Conclusion/Observation

- The global inflation average is 8.96%
- America leads with the highest average
- Afghanistan shows both the highest and lowest single-year inflation
- Africa, though large, has low inflation across many countries
- Asia records the highest average inflation among all regions

This dashboard enables better understanding and tracking of inflation patterns.

9. Future Scope

- Integrate real-time inflation APIs
- Use predictive models to forecast inflation trends
- Add economic indicators like GDP and currency value
- Provide country-level detailed dashboards

10. Appendix

10.1 Source Code (if any)

https://drive.google.com/drive/folders/11JuENzFl-AoIwyTfkYwGKkLqZGDIi1qF?usp=drive_link

10.2 GitHub & Project Demo Link

https://drive.google.com/drive/folders/1YC-QekDV9nuHefpJIBYY9eyj-z-hrb1x?usp=drive_link

https://github.com/DhruvRawat19/power-bi-inflation-analysis-journeying-through-global-economic-terrain.git