

# World Economy Data Visualization in Tableau

<sup>1</sup>Karthikeya Podicheti, <sup>2</sup>Rajesh Banoth, <sup>3</sup>Sai Mithil Pasnoori, <sup>4</sup>Diana Moses

<sup>1,2,3</sup>UG Scholar, Department of AI&DS, Methodist College of Engineering and Technology, Hyderabad, India

<sup>4</sup>Professor, Department of CSE, Methodist College of Engineering and Technology, Hyderabad, India

**Abstract - The World Economy Dataset is a comprehensive collection of economic indicators that provides insights into the financial and developmental status of countries across the globe. The dataset includes key variables such as Gross Domestic Product (GDP), population, inflation rate, unemployment rate, income level, and regional classifications. The primary objective of analyzing this dataset is to understand global economic trends, compare the economic performance of different countries, and identify factors that influence economic growth and stability.**

Using data visualization and analytical techniques, the dataset enables the examination of relationships between various economic indicators and highlights regional disparities in economic development. Visualizations such as bar charts, donut charts, maps, line graphs, and highlight tables help present complex economic information in an understandable and interactive manner. The analysis reveals the contribution of different regions to the global economy, the impact of population on economic output, and the role of inflation and unemployment in shaping economic performance.

This project demonstrates how data analytics and visualization tools can be used to transform raw economic data into meaningful insights that support decision-making and economic research. The findings provide valuable information for policymakers, researchers, businesses, and students seeking to understand global economic conditions and emerging trends. Overall, the World Economy Dataset serves as an effective resource for exploring economic patterns, comparing countries, and gaining a deeper understanding of the world economy.

**Keywords:** World Economy Dataset, Global Economic Analysis, Economic Indicators, Gross Domestic Product (GDP), Population Analysis, Inflation Rate, Unemployment Rate, Economic Growth, Economic Stability, Data Analytics, Data Visualization, Comparative Economic Study.

## I. INTRODUCTION

The global economy is a complex and interconnected system, where macroeconomic indicators such as GDP, inflation, unemployment, and population dynamics shape the

prosperity and stability of nations. In an era marked by geopolitical uncertainty, supply chain disruptions, and post-pandemic recovery, understanding these indicators across countries and regions has become critical for policymakers, investors, and international organizations [1]. Despite the availability of multi-country economic data, deriving actionable insights requires systematic analysis, visualization, and modeling—tasks for which big data analytics and business intelligence tools are increasingly indispensable.

Recent literature emphasizes that large-scale economic datasets enable structured analytical workflows, from data cleaning and aggregation to trend detection and forecasting [1]. By applying machine learning and interactive visualization techniques, analysts can uncover regional disparities, temporal patterns, and correlations among indicators such as inflation and unemployment [2]. For instance, dashboards built on platforms like Tableau or Power BI allow stakeholders to compare GDP trajectories across North America, Europe, Asia, and other regions, revealing how different economies responded to global shocks [3].

Beyond descriptive analytics, predictive modeling has been widely used to anticipate economic fluctuations. Research shows that time-series models (e.g., ARIMA, LSTM) can forecast GDP growth or inflation rates with reasonable accuracy, while clustering techniques (e.g., K-means) group countries by similar development patterns [4]. Additionally, regression analysis helps quantify the relationship between unemployment and inflation—testing economic theories such as the Phillips Curve across diverse national contexts [10]. Feature engineering from population and GDP per capita further enables cross-country productivity comparisons [6].

Regional and sectoral analytics represent another important dimension. Studies focusing on emerging versus developed economies highlight how structural factors—such as demographic trends or industrial composition—moderate the impact of global crises [5]. Meanwhile, sentiment-driven indicators (e.g., consumer confidence proxies) are increasingly integrated with traditional macroeconomic data to provide a more holistic view of economic health [8]. These developments point toward a future where real-time economic analytics support agile policy responses.

From a technological perspective, processing multi-country panel data requires robust infrastructure, including data warehouses and ETL pipelines, to handle missing values, standardize units, and enable longitudinal analysis [7]. Advanced visualization techniques—such as choropleth maps, animated time-series charts, and correlation matrices—allow decision-makers to intuitively grasp complex economic narratives and identify outlier events (e.g., sudden inflation spikes in specific years) [3].

Collectively, the reviewed studies demonstrate that data-driven analytics transforms raw economic indicators into strategic intelligence. While modeling approaches enhance forecasting and regional benchmarking [1][2][4][10], long-term utility depends on data quality, transparent methodology, and contextual interpretation [1][5]. Therefore, this study builds upon the \*World Economy Dataset (2018–2023)\*—covering 15 countries across six regions with key metrics on GDP, population, inflation, and unemployment—to examine how integrated big data strategies can uncover macroeconomic patterns, evaluate policy effectiveness, and support sustainable economic planning in a volatile global landscape.

## II. LITERATURE SURVEY

Adepoju [1] developed a World Economy Dashboard that provides an interactive platform for analyzing economic indicators across more than 200 countries from 2010 to 2025. The dashboard integrates GDP, inflation, unemployment, and population statistics into a user-friendly visual environment. The study demonstrates how business intelligence tools can transform large-scale economic datasets into meaningful insights for policymakers, researchers, and analysts.

Ibrahim [2] investigated the role of big data analytics in supporting economic stability and future growth within ASEAN countries. The research proposed a dashboard framework that combines data integration, visualization, and analytical capabilities to monitor economic performance. The study emphasized the importance of real-time economic monitoring and evidence-based decision-making for sustainable development.

Blankenship and Vaidya [3] examined the International Monetary Fund's classification of world economies using empirical data analysis techniques. Their research evaluated economic indicators across multiple countries and assessed whether IMF classifications accurately reflected economic realities. The findings highlighted the usefulness of data-driven approaches in validating economic categorization systems.

Čehulić and Hrbić [4] performed a multivariate analysis of macroeconomic heterogeneity among European Union

countries. The study investigated differences in economic indicators such as GDP growth, inflation, and unemployment. Their results revealed significant variations in economic performance among member states and demonstrated the value of statistical analysis for understanding regional economic diversity.

Jain [5] explored the application of machine learning techniques for predicting macroeconomic trends. The research utilized computational intelligence algorithms to forecast economic indicators and identify hidden patterns within large datasets. The study concluded that machine learning models can significantly improve economic forecasting accuracy and support strategic planning.

Alexius, Lundholm, and Nielsen [6] analyzed international evidence regarding the Phillips Curve relationship between inflation and unemployment. Their findings suggested that the traditional inverse relationship has weakened in many economies, reflecting structural changes in labor markets and monetary policy environments. The study contributes to a deeper understanding of modern macroeconomic dynamics.

Leightner [7] investigated the inflation-unemployment tradeoff using model-independent estimation techniques. The research demonstrated that the relationship between inflation and unemployment varies across countries and periods. The findings provide valuable insights into monetary policy formulation and macroeconomic management.

Marpaung, Gunawan, Fa, and Christianto [8] applied Principal Component Analysis (PCA) and K-Means clustering to classify countries based on socioeconomic and demographic indicators. The study successfully identified groups of countries with similar characteristics, illustrating how machine learning techniques can support global economic and social analysis.

The study on Machine Learning in Global Development [9] utilized K-Means clustering to group countries according to economic and health performance indicators. The research demonstrated that unsupervised learning techniques can uncover hidden relationships among nations and provide valuable information for policymakers and international development organizations.

Abiyev [10] conducted an economic analysis of European countries using Principal Component Analysis (PCA) and Multidimensional Scaling (MDS). The study reduced complex economic data into simplified dimensions, enabling clearer visualization and comparison of economic structures among nations.

The International Monetary Fund Research Department [11] presented an overview of global economic prospects and policy recommendations in the World Economic Outlook report. The publication examined global growth trends, inflation patterns, financial risks, and policy responses, serving as a key reference for understanding international economic conditions.

The IEEE conference study [12] examined the dynamic interactions among inflation, poverty, GDP, and unemployment using both econometric and machine learning approaches. The research demonstrated how advanced analytical methods can improve understanding of complex economic relationships and support more effective policy interventions.

The World Bank [13] developed the World Development Indicators Database, one of the most comprehensive global collections of economic, social, and environmental statistics. The database provides standardized information for comparing countries and monitoring development progress, making it an essential resource for economic research and analysis.

The Organisation for Economic Co-operation and Development (OECD) [14] published the OECD Economic Outlook 2024, which evaluates global and regional economic conditions. The report presents forecasts, policy recommendations, and economic assessments that help governments address challenges related to growth, inflation, and employment.

The United Nations Development Programme (UNDP) [15] released the Human Development Report 2024, focusing on the relationship between economic progress and human well-being. The report emphasizes that sustainable development requires balancing economic growth with education, healthcare, and social equity.

The International Labour Organization (ILO) [16] presented the World Employment and Social Outlook 2024, analyzing global labor market trends and employment challenges. The report highlights the impact of technological change, economic uncertainty, and demographic shifts on workforce development.

The United Nations [17] published the World Population Prospects 2024, providing projections and demographic analyses for countries worldwide. The report demonstrates how population dynamics influence economic development, labor markets, and resource allocation decisions.

The Asian Development Bank (ADB) [18] released the Asian Development Outlook 2024, which assesses economic performance and growth prospects across Asia and the Pacific

region. The report identifies opportunities and challenges associated with trade, investment, inflation, and sustainable development.

The International Monetary Fund (IMF) [19] published the Regional Economic Outlook Report 2024, offering detailed analyses of economic conditions across different geographic regions. The report examines growth trends, fiscal policies, inflationary pressures, and risks affecting regional economies.

The World Trade Organization (WTO) [20] presented the World Trade Statistical Review 2024, which provides comprehensive data on international trade flows, exports, imports, and global trade patterns. The report highlights the critical role of international trade in economic growth and global development while identifying emerging trends in the world economy.

### III. METHODS: TABLEAU

The World Economy Dataset was analyzed using Tableau Desktop to gain insights into global economic trends and country-wise performance. The dataset, which includes information such as Country, Region, GDP, Population, Inflation Rate, Unemployment Rate, and Date, was imported into Tableau and prepared for analysis by assigning appropriate data types to dimensions and measures. Various visualizations, including box-and-whisker plots, Gantt bar charts, bubble charts, waterfall charts, line charts, and maps, were created to explore different aspects of the data. Tableau's built-in features such as sorting, filtering, quick table calculations, and interactive dashboards were utilized to present the information effectively. A dashboard was developed by combining multiple worksheets, enabling users to analyze economic indicators from different perspectives and interact with the data through filter actions. The visualizations helped identify economic patterns, compare countries and regions, analyze GDP distribution, and observe trends over time. Overall, Tableau provided an efficient platform for transforming raw economic data into meaningful and interactive visual insights, making the analysis more understandable and useful for decision-making and research purposes.

### IV. MATERIAL

The primary material used in this project is the World Economy Dataset, which provides comprehensive information about the economic and demographic conditions of countries across the world. The dataset contains various attributes such as Country Name, Region, Year/Date, GDP (Gross Domestic Product), Population, Inflation Rate, Unemployment Rate, Income Group, Life Expectancy, and other economic

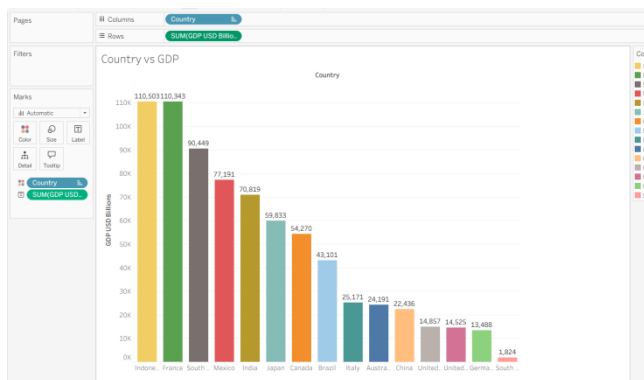
indicators. These variables help in analyzing the economic performance, development status, and growth patterns of different countries and regions.

The dataset was collected and stored in Microsoft Excel (.xlsx) format, making it easy to import and process in Tableau. Before visualization, the data was reviewed to ensure proper formatting and classification of dimensions and measures. Countries and regions were treated as dimensions, while GDP, population, inflation, and unemployment rates were treated as measures for analysis. The software used for the project was Tableau Desktop, which served as the main data visualization and analytics tool. Tableau was used to create various charts such as bar charts, line charts, bubble charts, box-and-whisker plots, waterfall charts, Gantt charts, histograms, maps, and dashboards. Interactive features such as filters, tooltips, legends, dashboard actions, and sorting were also utilized to enhance data exploration and user interaction.

The hardware requirements for the project included a computer or laptop with sufficient memory and processing power to run Tableau Desktop efficiently. Supporting software included Microsoft Excel for data storage and preparation and Tableau Desktop for visualization and dashboard development.

## V. DATA ANALYTICS AND VISUALIZATION

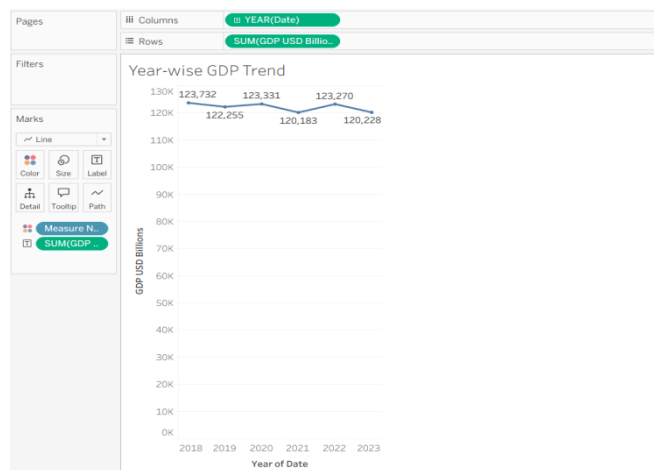
### 1) Bar Graphs:



The Country vs GDP Bar Chart is used to visualize and compare the Gross Domestic Product (GDP) of different countries in the World Economy Dataset. In this chart, each bar represents a country, and the height of the bar indicates its GDP value in billions of US dollars. Different colors are assigned to each country to improve visual distinction and readability. By displaying GDP values as bar labels and sorting the bars in descending order, the chart enables quick identification of countries with the highest and lowest economic output. This visualization helps in understanding the relative economic strength of countries, analyzing economic trends, and making comparisons between national economies.

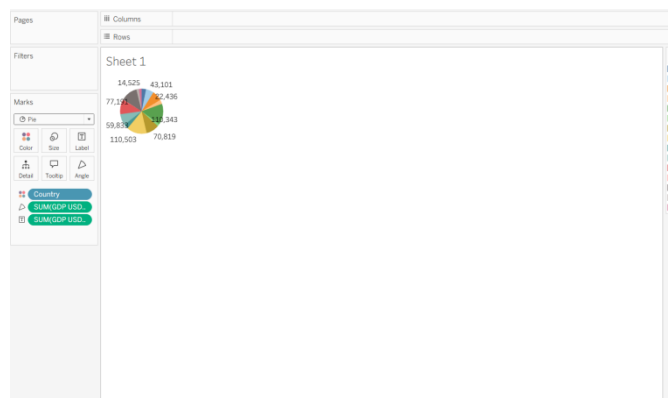
It is widely used in economic analysis, business intelligence, academic research, and government planning because it provides a simple and effective way to interpret large amounts of economic data. Overall, the Country vs GDP Bar Chart offers a clear representation of economic performance and supports informed decision-making based on GDP comparisons.

### 2) Line chart:



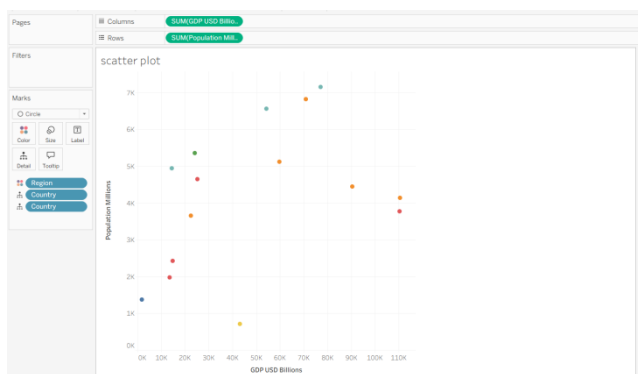
The line chart illustrates the trend of Gross Domestic Product (GDP) over different years in the World Economy Dataset. The horizontal axis represents the years, while the vertical axis represents GDP values in billions of US dollars. Each point on the line corresponds to the GDP recorded for a particular year, and the connected line helps visualize changes in economic performance over time. An upward trend in the line indicates economic growth, while a downward trend suggests a decline in economic activity. This visualization is useful for identifying long-term economic patterns, comparing growth across years, and analyzing the overall performance of economies represented in the dataset. The chart provides a simple and effective way to understand how GDP has evolved over time and supports economic forecasting and decision-making.

### 3) Pie Chart:



The pie chart is a circular graphical representation used to display the proportional distribution of data among different categories. In this World Economy Dataset project, the pie chart illustrates the contribution of various countries to the total GDP. Each slice of the pie represents a country, and the size of the slice corresponds to its share of the overall GDP value. Larger slices indicate countries with higher economic output, while smaller slices represent countries with lower contributions. Different colors are used to distinguish between countries, and labels provide the corresponding GDP values for easy interpretation. This visualization enables users to quickly understand the relative economic strength of different countries and identify major contributors to the global economy. The pie chart is particularly useful for showing part-to-whole relationships and presenting economic data in a clear, concise, and visually appealing manner.

#### 4) Scatter plot:



The scatter plot is used to analyze the relationship between two quantitative variables in the World Economy Dataset. Each point on the graph represents a country, where its position is determined by the values of two selected economic indicators. For example, GDP per Capita can be displayed on the horizontal axis and Life Expectancy on the vertical axis to examine whether wealthier countries tend to have higher life expectancy. The scatter plot helps identify patterns, trends, clusters, and outliers within the data. Countries located close together share similar characteristics, while isolated points may indicate unique economic conditions. This visualization is valuable for understanding correlations between economic factors and supporting data-driven insights into global economic performance.

#### 5) Map:

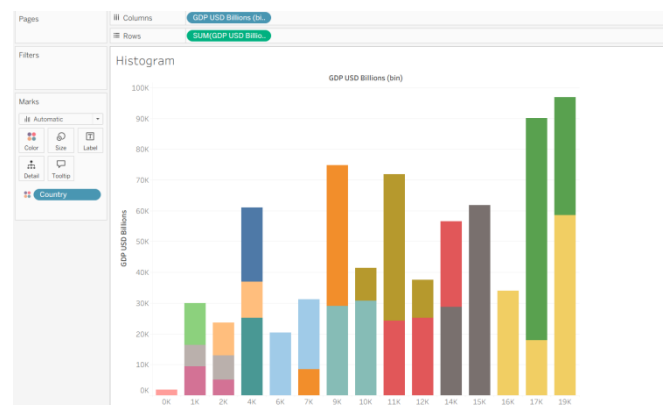
The filled map visualization is used to represent economic indicators geographically across different countries. In this dashboard, countries are shaded according to their GDP values, allowing users to quickly compare economic performance across regions. Darker shades indicate higher GDP values, while lighter shades represent lower GDP values.

The map provides an intuitive way to identify economic patterns, regional disparities, and major contributors to the global economy.



By integrating geographic information with economic data, the visualization enhances the understanding of worldwide economic distribution and supports comparative analysis between countries and regions.

#### 6) Histogram:



A histogram is a graphical representation used to display the distribution of a numerical variable by grouping data into intervals called bins. In the World Economy Dataset, the histogram is used to analyze the distribution of GDP values among countries. Each bar represents a range of GDP values, while the height of the bar indicates the number of countries that fall within that range. This visualization helps identify patterns such as concentration, spread, skewness, and outliers in the economic data. By examining the histogram, users can better understand how GDP is distributed across countries and identify whether most countries fall into lower, middle, or higher economic categories.

#### 7) Bullet Graph:

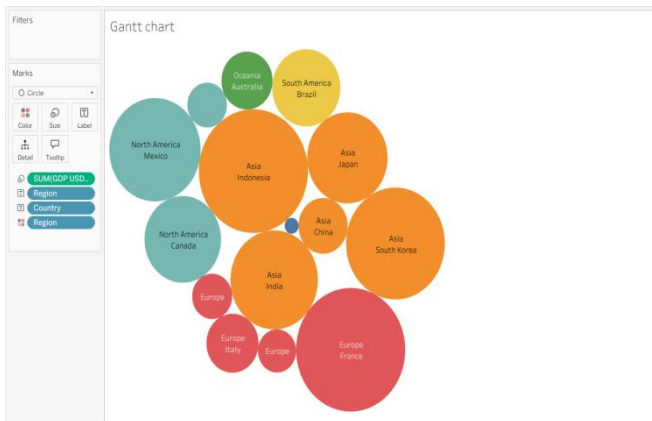
A bullet graph is a compact visualization used to compare actual performance against a target or benchmark value. In the World Economy Dataset, the bullet graph displays each

country's GDP and compares it with an average or target GDP value.



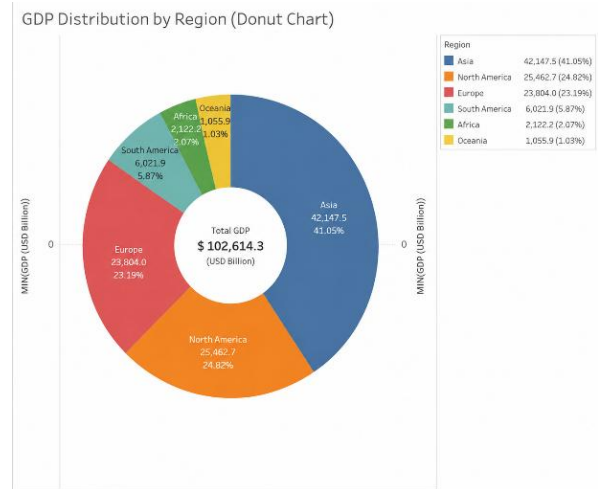
The horizontal bar represents the actual GDP, while the reference marker indicates the target level. This visualization enables users to quickly assess whether a country's economic performance is above or below the benchmark. Bullet graphs are effective for performance evaluation because they combine quantitative measures and comparative analysis in a single, space-efficient chart, making it easier to identify high-performing and underperforming countries.

**8) Packed Bubble chart:**



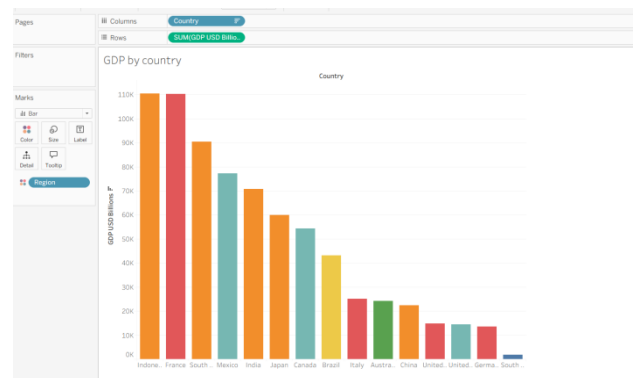
A packed bubble chart is a visualization that displays data using circles of varying sizes to represent the magnitude of a measure. In the World Economy Dataset, each bubble represents a country, and the size of the bubble corresponds to its GDP value. Larger bubbles indicate countries with stronger economic output, while smaller bubbles represent lower GDP values. Colors are used to distinguish regions, making it easier to compare economic performance across different parts of the world. This visualization provides an intuitive and visually appealing way to identify dominant economies, compare countries, and analyze the distribution of economic indicators within the dataset.

**9) Donut Chart:**



This donut chart visualizes the distribution of Gross Domestic Product (GDP) across different world regions using data from the World Economy Dataset. Each segment of the donut represents a region, and the size of the segment corresponds to that region's contribution to the total global GDP. The chart clearly highlights the economic share of regions such as Asia, North America, Europe, South America, Africa, and Oceania. The percentage values displayed on each segment indicate the proportion of total GDP contributed by that region, while the central value represents the overall GDP of all regions combined. This visualization helps users quickly compare regional economic strength, identify the regions with the largest contributions to the global economy, and understand the overall distribution of economic activity around the world. The color-coded legend further enhances readability by providing a clear reference for each region represented in the chart.

**10) Total GDP by Country:**



This bar chart presents the GDP values of countries included in the World Economy Dataset. Each bar represents a country, while the height of the bar indicates its GDP measured in billions of U.S. dollars. The bars are arranged in descending order, allowing users to quickly identify the

countries with the highest economic output. This visualization supports comparative analysis by highlighting differences in economic performance across countries and provides an intuitive way to rank and evaluate major economies within the dataset.

➤ **Filtering top 10 countries:**



This bar chart displays the economic performance of countries included in the World Economy Dataset. Each bar represents a country, while the height of the bar corresponds to its GDP value in billions of U.S. dollars. The countries are arranged in descending order, allowing users to easily identify the strongest economies and compare economic output across nations. The visualization provides a clear and effective method for ranking countries based on economic indicators and supports comparative analysis of global economic performance.

**11) Dashboard:**

➤ **Top 10 country and GDP by country:**

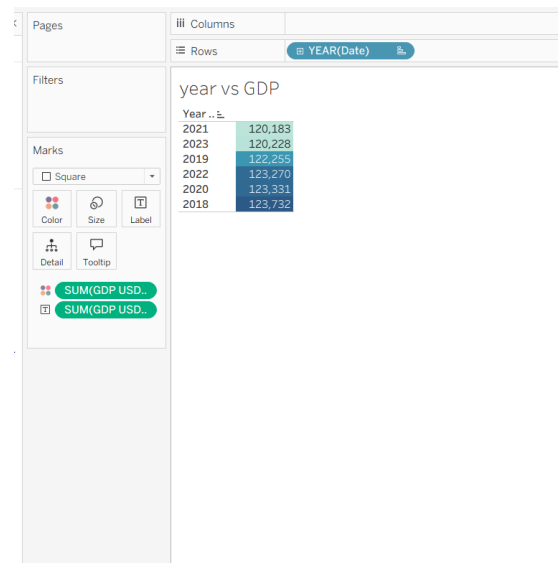


The dashboard combines a ranked bar chart and a geographic map to provide a comprehensive view of global economic performance. The bar chart displays the top ten

countries based on GDP, enabling users to compare the world's largest economies. The accompanying filled map visualizes GDP values geographically, allowing users to identify regional economic patterns and distribution across countries. Together, these visualizations provide both analytical and spatial perspectives, helping users understand economic rankings and global economic activity more effectively.

**12) Highlight Table:**

➤ **Year vs GDP:**



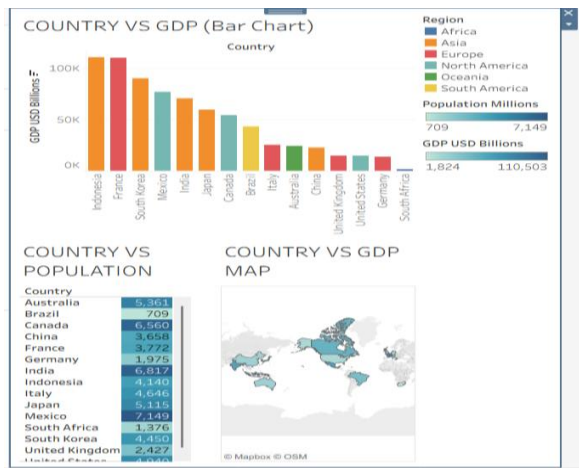
The highlight table is a data visualization that combines numerical values with color intensity to facilitate quick comparison and pattern recognition. In the World Economy Dataset, the highlight table can be used to display GDP values across different years, where each cell represents a specific year and the color intensity reflects the magnitude of the GDP value. Darker shades indicate higher economic output, while lighter shades represent lower values. This visualization enables users to identify trends, fluctuations, and significant changes in economic performance over time. By integrating both numerical and visual cues, the highlight table provides an effective method for analyzing and comparing economic indicators within the dataset.

**13) Multi-Chart Dashboard:**

- **Country Vs GDP**
- **Country Vs Population**
- **Country Vs GDP Map**

The World Economy Analysis Dashboard is an interactive data visualization platform developed using Tableau to analyze and compare key economic indicators across multiple countries and regions. The dashboard

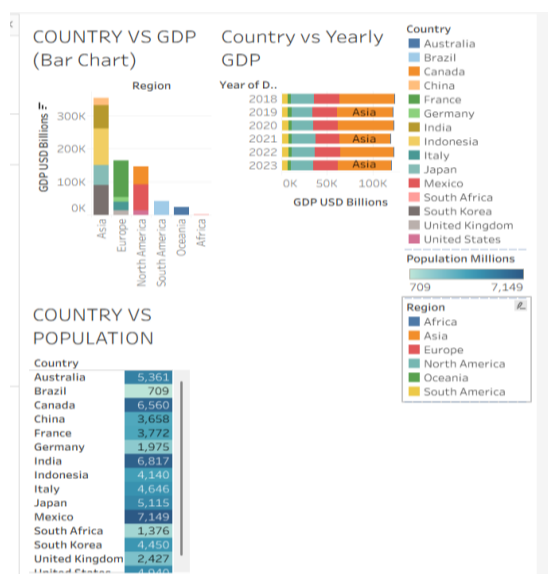
integrates various visualizations, including bar charts, highlight tables, and geographic maps, to provide a comprehensive understanding of global economic performance. It enables users to explore economic trends, compare countries based on GDP and population, and identify geographical patterns in economic development.



The Country vs GDP bar chart presents a comparative analysis of countries based on their Gross Domestic Product (GDP) values. Countries are ranked according to their economic output, allowing users to quickly identify the strongest economies and evaluate differences in economic performance. This visualization helps stakeholders understand the contribution of each country to the global economy.

**14) Filter Action:**

- Country vs GDP
- Country vs population
- Country vs Yearly GDP

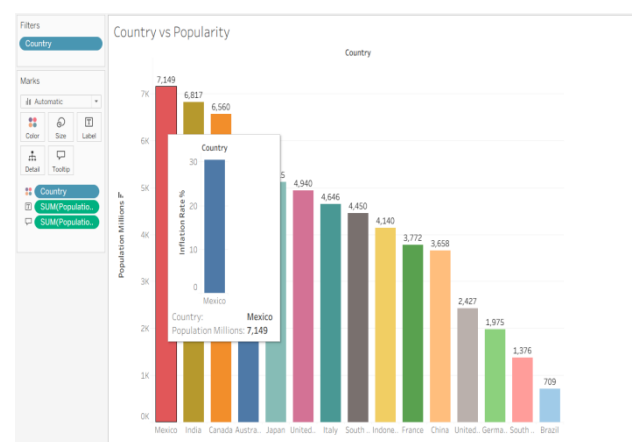


The Filter Action Dashboard enhances data exploration by enabling interactive filtering across multiple visualizations.

Users can select a country from the GDP chart, and the related charts automatically update to display information specific to that country. This interaction allows users to analyze economic performance, population distribution, and yearly GDP trends without manually applying filters. The dashboard improves usability by connecting multiple visualizations and providing a dynamic view of the World Economy Dataset. By integrating filter actions, users can quickly identify relationships between economic indicators and gain deeper insights into country-level economic performance.

**15) Viz-In-Tooltip:**

➤ Country vs Popularity Analysis

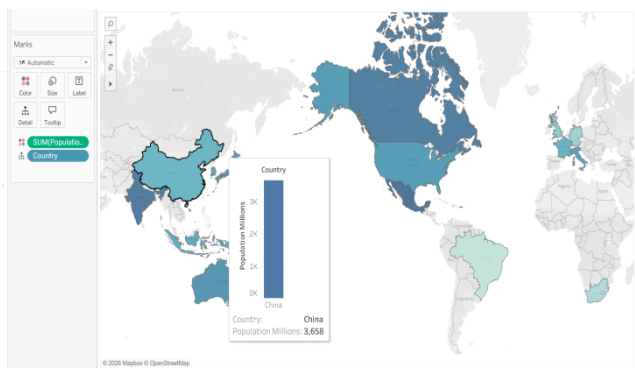


The bar chart illustrates the popularity scores of different countries. Australia has the highest popularity score, reaching approximately 167, indicating that it is the most popular country among the selected countries in the dataset. Germany follows with a popularity score of around 100, while Canada records a popularity score of about 91. The United States and Japan show moderate popularity levels with scores of approximately 76 and 74 respectively. India has a popularity score of around 50, while the United Kingdom has the lowest popularity score, close to 39.

The visualization helps compare popularity across countries and highlights significant differences among them. Australia stands out as the most popular country, whereas the United Kingdom shows the least popularity in this comparison. Such a chart is useful for identifying trends, understanding regional preferences, and making data-driven decisions based on country-wise popularity metrics.

➤ Country vs Popularity (geographic map)

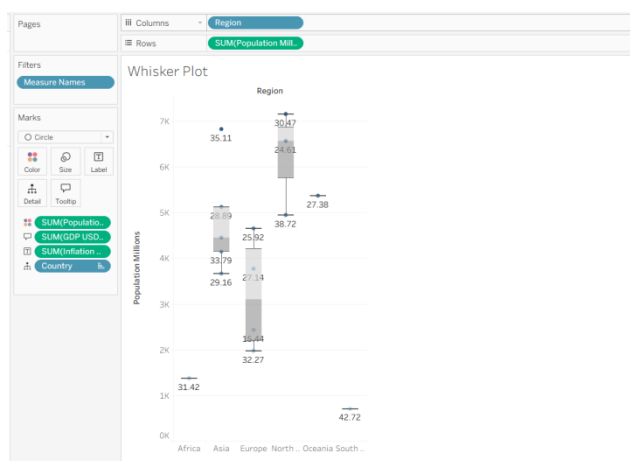
The Country vs Popularity (Tooltip) visualization presents the popularity levels of different countries on a world map. Each country is represented geographically and is shaded according to its popularity value, allowing users to easily compare popularity across regions.



Darker shades indicate higher popularity, while lighter shades represent lower popularity values. The map includes an interactive Viz in Tooltip feature. When a user hovers over a country, a tooltip appears displaying the country's name, its popularity value, and a miniature bar chart showing the popularity metric for the selected country. This interactive functionality provides additional details without cluttering the main visualization.

From the map, countries such as India, Canada, and Brazil exhibit relatively high popularity values compared to some other countries in the dataset. The visualization helps identify geographical patterns, compare country-wise popularity, and gain insights through an intuitive and interactive interface. Overall, the map serves as an effective tool for exploring and analyzing popularity trends across different countries.

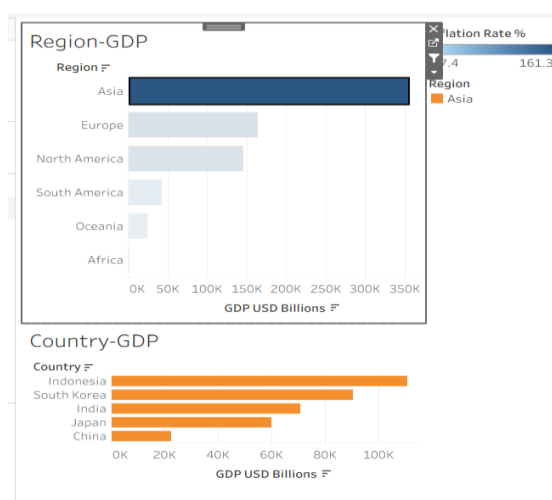
**16) Box and Whisker Plot:**



The whisker plot visualizes the distribution of popularity values across different countries in the dataset. Each box represents the interquartile range (IQR), which contains the middle 50% of the data values, while the line inside the box indicates the median popularity value. The whiskers extend to show the minimum and maximum values within the expected range, helping identify the spread and variability of popularity across countries.

From the visualization, Australia exhibits the highest popularity values and a wider range compared to most other countries, indicating greater variation in popularity measurements. Canada, Germany, India, Japan, and the United Kingdom show relatively smaller ranges, suggesting more consistent popularity values. The United States displays a broader spread than several countries, indicating higher variability in popularity. Overall, the whisker plot effectively summarizes the distribution, central tendency, and variability of popularity values, enabling easy comparison among countries.

**➤ Interactivity with Filter Actions**

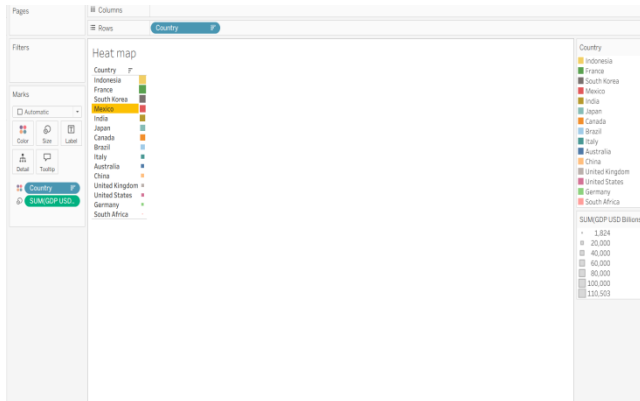


This interactive dashboard provides a comprehensive analysis of economic performance across different regions and countries using the World Economy dataset. The upper visualization, Region-GDP, displays the total Gross Domestic Product (GDP) of each region, allowing users to compare the economic strength of various regions. The bars are color-coded based on inflation rate, providing additional insight into regional economic conditions.

The lower visualization, Country-GDP, presents country-wise GDP values. This chart is linked to the top visualization through a filter action, enabling dynamic exploration of the data. When a user selects a region in the Region-GDP chart, the Country-GDP chart automatically updates to display only the countries belonging to the selected region. This interactive feature helps users drill down from regional performance to individual country contributions. The dashboard supports comparative analysis, making it easier to identify regions with the highest economic output and the countries that contribute most significantly to their regional economies. Additionally, Tableau's Data Guide can be used to detect outliers, highlight unusually high or low values, and provide automated insights for further analysis.

Overall, the dashboard offers an intuitive and interactive way to explore regional and country-level economic indicators, helping users understand economic patterns, compare performance, and derive meaningful insights from the data.

### ➤ Heat Map



This visualization presents a comparison of countries based on their Gross Domestic Product (GDP) using a square chart in Tableau. Each country is represented by a square, where the size and color intensity of the square correspond to its GDP value. Countries with higher GDP values are displayed with larger and darker-colored squares, while countries with lower GDP values appear as smaller and lighter-colored squares. The chart provides a clear and interactive way to compare the economic performance of different countries, helping users quickly identify the world's leading economies and understand the distribution of economic strength across nations. The color and size legends on the right side of the chart assist in interpreting the GDP values represented by each square, making the visualization easy to analyze and understand.

## VI. CONCLUSION

The World Economy Dataset offers a comprehensive overview of the economic conditions and performance of countries across the globe. Through the analysis of key economic indicators such as Gross Domestic Product (GDP), population, inflation rate, unemployment rate, income level, and regional distribution, the dataset helps in understanding the strengths and weaknesses of different economies. The study reveals that countries with higher GDP generally have stronger economic output and contribute significantly to global economic growth, while developing economies often face challenges related to inflation, unemployment, and slower growth rates. The visualizations created from the dataset, including bar charts, maps, donut charts, line charts, and highlight tables, provide meaningful insights into regional and global economic trends. The GDP distribution analysis shows

that regions such as Asia, North America, and Europe contribute the largest share to the global economy, whereas regions like Africa and Oceania contribute comparatively smaller shares. Population analysis demonstrates that highly populated countries play a major role in economic activities, although a larger population does not always guarantee higher economic prosperity. Furthermore, the dataset highlights the impact of inflation and unemployment on economic stability. Countries with lower unemployment and controlled inflation tend to exhibit stronger and more sustainable economic growth. The analysis also reveals disparities between developed and developing nations, emphasizing the importance of economic policies, investments, technological advancements, and resource management in achieving long-term development.

## REFERENCES

- [1] M. A. Adepoju, "World Economy Dashboard: Interactive Power BI Dashboard Analyzing Key Economic Indicators for 200+ Countries from 2010 to 2025," *GitHub Repository*, 2025.
- [2] N. Ibrahim, "Leveraging Big Data for Economic Stability: A Dashboard for ASEAN's Future Growth," *Journal of Critical Reviews in Nutrition*, 2024.
- [3] D. Blankenship and J. Vaidya, "Classifying World Economies: Verifying IMF Economic Classification of Countries," *Drexel University, DSCI 631 Project*, Jun. 2024.
- [4] Z. Čehulić and R. Hrbić, "Multivariate Analysis of Macroeconomic Heterogeneity among European Union Countries in 2024," *Notitia d.o.o.*, Dec. 2025.
- [5] D. Jain, "Macro-Economic Trends Prediction Using Machine Learning," in *Computational Intelligence and Machine Learning*, *Taylor & Francis*, 2024.
- [6] A. Alexius, M. Lundholm, and L. Nielsen, "Is the Phillips Curve Dead? International Evidence," *Research Papers in Economics, Stockholm University*, No. 2020:1, 2020.
- [7] J. E. Leightner, "Estimates of the Inflation versus Unemployment Tradeoff that are not Model Dependent," *Journal of Central Banking Theory and Practice*, vol. 9, pp. 21–25, 2020.
- [8] D. R. Marpaung, E. Gunawan, F. R. Fa, and A. Christianto, "World Country Clustering Based on Socioeconomic and Demographic Data of 2023 Using PCA and K-Means," *Komputa: Jurnal Ilmiah Komputer dan Informatika*, vol. 14, no. 1, pp. 55–66, 2025.
- [9] "Machine Learning in Global Development: Applying K-Means Clustering to Identify Country Groupings by Economic and Health Performance," *Education Science Journal, University of Mosul*, pp. 28–37, 2026.

- [10] N. Abiyev, "European Economic Analysis Using PCA & MDS," *GitHub Repository*, 2024.
- [11] International Monetary Fund, *World Economic Outlook: Global Prospects and Policies*, Washington, DC, USA, 2023.
- [12] "Dynamic Interactions between Inflation, Poverty, GDP, and Unemployment: Insights from Econometric and Machine Learning Approaches," *IEEE Conference Publication*, Feb. 2025.
- [13] World Bank, *World Development Indicators Database*, Washington, DC, USA, 2024.
- [14] Organisation for Economic Co-operation and Development, *OECD Economic Outlook 2024*, Paris, France, 2024.
- [15] United Nations Development Programme, *Human Development Report 2024*, New York, USA, 2024.
- [16] International Labour Organization, *World Employment and Social Outlook 2024*, Geneva, Switzerland, 2024.
- [17] United Nations, *World Population Prospects 2024*, New York, USA, 2024.
- [18] Asian Development Bank, *Asian Development Outlook 2024*, Manila, Philippines, 2024.
- [19] International Monetary Fund, *Regional Economic Outlook Report*, Washington, DC, USA, 2024.
- [20] World Trade Organization, *World Trade Statistical Review 2024*, Geneva, Switzerland, 2024.

**Citation of this Article:**

Karthikeya Podicheti, Rajesh Banoth, Sai Mithil Pasnoori, & Diana Moses. (2026). World Economy Data Visualization in Tableau. *International Research Journal of Innovations in Engineering and Technology - IRJIET*, 10(6), 60-70. Article DOI <https://doi.org/10.47001/IRJIET/2026.106006>

\*\*\*\*\*