Data Analysis and Visualization Report: Economy of Kyrgyzstan

# 1. Introduction

Kyrgyzstan is a landlocked country in Central Asia that has great economic change since independence which it gained in 1991 from the Soviet Union. The economic trends of the country are very important for policymakers, researchers, and investors. In this project, an analysis was done on GDP, inflation rate, unemployment rate, average salary, and government debt from 1995 to 2024. These metrics help us understand Kyrgyzstan’s economic stability, growth, and challenges over the past decades.

# 2. Data Description

The dataset used in this project was compiled from multiple sources, including Focus Economics, Trading Economics, and historical records from international organizations. It covers the years from 1995 to 2024 and includes the following variables:  
  
- Year  
- Population  
- GDP (in billion KGS)  
- GDP Growth (%)  
- Inflation (%)  
- Unemployment Rate (%)  
- Average Salary (in KGS)  
- Exports and Imports (in billion USD)  
- Government Debt (in billion USD)  
  
The dataset contains 30 rows and 10 columns, with no missing values. Exchange rates were added to convert values where necessary.

# 3. Data Analysis

Summary Statistics:  
- The average GDP growth rate over 30 years was 10.83%, with a peak of 23.1% and a minimum of -8.6%.  
- Inflation had an average of 10.63%, reaching up to 39.9% during crisis periods.  
- Unemployment varied between 4.1% and 8.9%, with an average of 7.44%.  
  
Unemployment Trends: A bar chart was used to depict the unemployment rate from 1994 to 2024, which easily captured periods of increases and decreases. Key Observations: - The unemployment rate was quite high in the early years after the Soviet Union dissolution. - It significantly dropped after 2010 and has remained more or less stable since then. Other Trends Noted Public liabilities surged progressively, majorly post-2010, to mirror capital works spending. Averages pay got huge but must be looked at with how much prices went up and shifts in the money rates.

# 4. Visualizations

We created multiple visualizations, including:  
1. Line Graph of GDP growth over time.  
2. Bar Chart of the unemployment rate from 1994–2024.  
3. Histogram for inflation distribution.  
4. Scatter Plot showing the relationship between GDP and average salary.  
5. Heatmap of the correlation between all variables.  
  
Each visualization was carefully labeled and customized to enhance readability and interpretation.  
  
Example — Bar Chart:  
The unemployment bar chart highlights how economic reforms and global crises (like the 2008 recession or COVID-19 pandemic) influenced the job market in Kyrgyzstan.

# 5. Conclusion

This analysis has shown that despite very dynamic economic times that the Kyrgyz Republic has had, on balance, growth and recovery has been the prevailing trend. Investments and international cooperation have beset the infrastructure and employment conditions, leaving inflation and debt challenges. From our visual analytics, we were able to spot: - Salaries and GDP on an uptrend - A stable but precarious situation with unemployment - The setting where inflation control and foreign debt management should come curtail

# 6. References

- https://www.focus-economics.com/countries/kyrgyzstan/  
- https://tradingeconomics.com/kyrgyzstan/monthly-gdp-yoy  
- http://www.stat.kg/en/  
- Exchange rate data from open financial datasets