

Predicting US Job Market Trends Using Economic Indicators

Group Number : 32

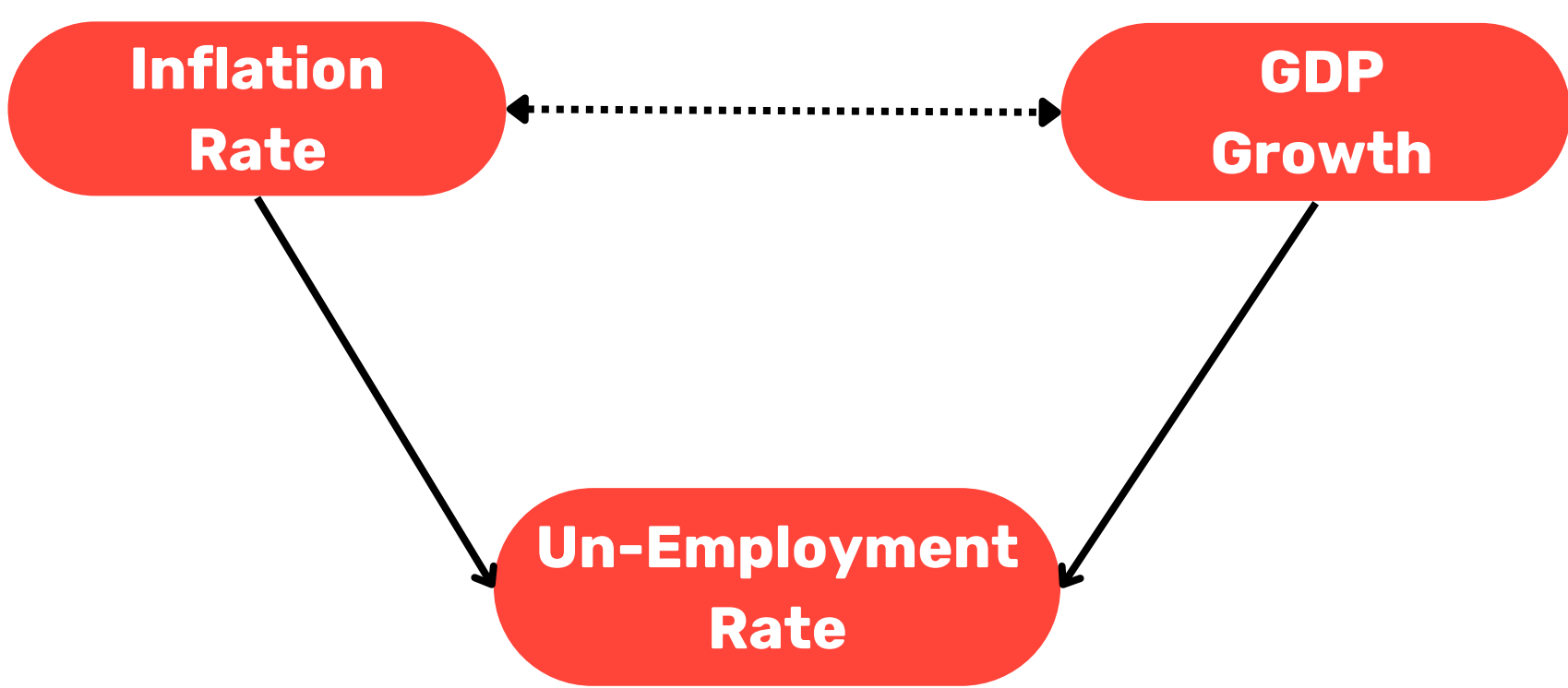
GROUP MEMBERS
Muhammad Naveed Ul Qamar
Zulqarnain Haider
MD Tawkir Ahmad
Amina Akter
Alexandra Hiebler

RESEARCH QUESTION

“Can we predict future job market trends based on current economic indicators like unemployment rates, GDP, and inflation?”

MOTIVATION

- Helps policymakers shape monetary and fiscal policies.
- Guides individuals in making informed career choices.
- Predictive insights support employment, investment, and training decisions.



Data

- Monthly economic data (1991–2023) sourced from [Kaggle](#).
- Key variables: Unemployment rate, GDP, Inflation.
- Preprocessing steps: Normalization, filtering.

Key Variables	Time Period	Source	Preprocessing
Unemployment Rate	1991-2023	IMF, Yahoo Finance, FHFA	Normalized
GDP Growth (constant)	1991-2023	Same as above	Normalized
Inflation Rate	1991-2023	Same as above	Normalized

Methods

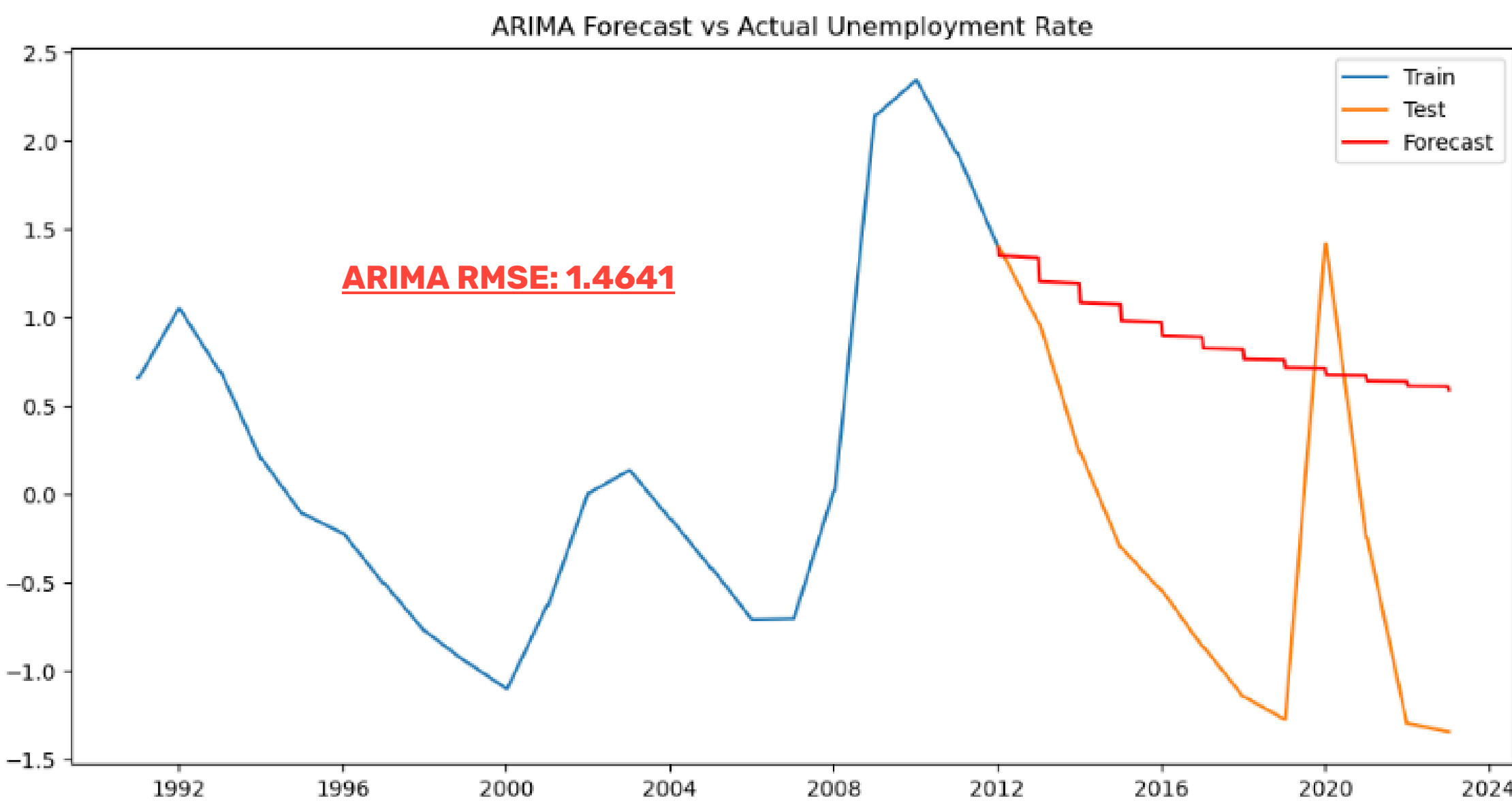
- ARIMA for time-series forecasting.
- Linear Regression for prediction using GDP and inflation.
- Correlation Analysis to assess relationships between variables.

GITHUB
Repository

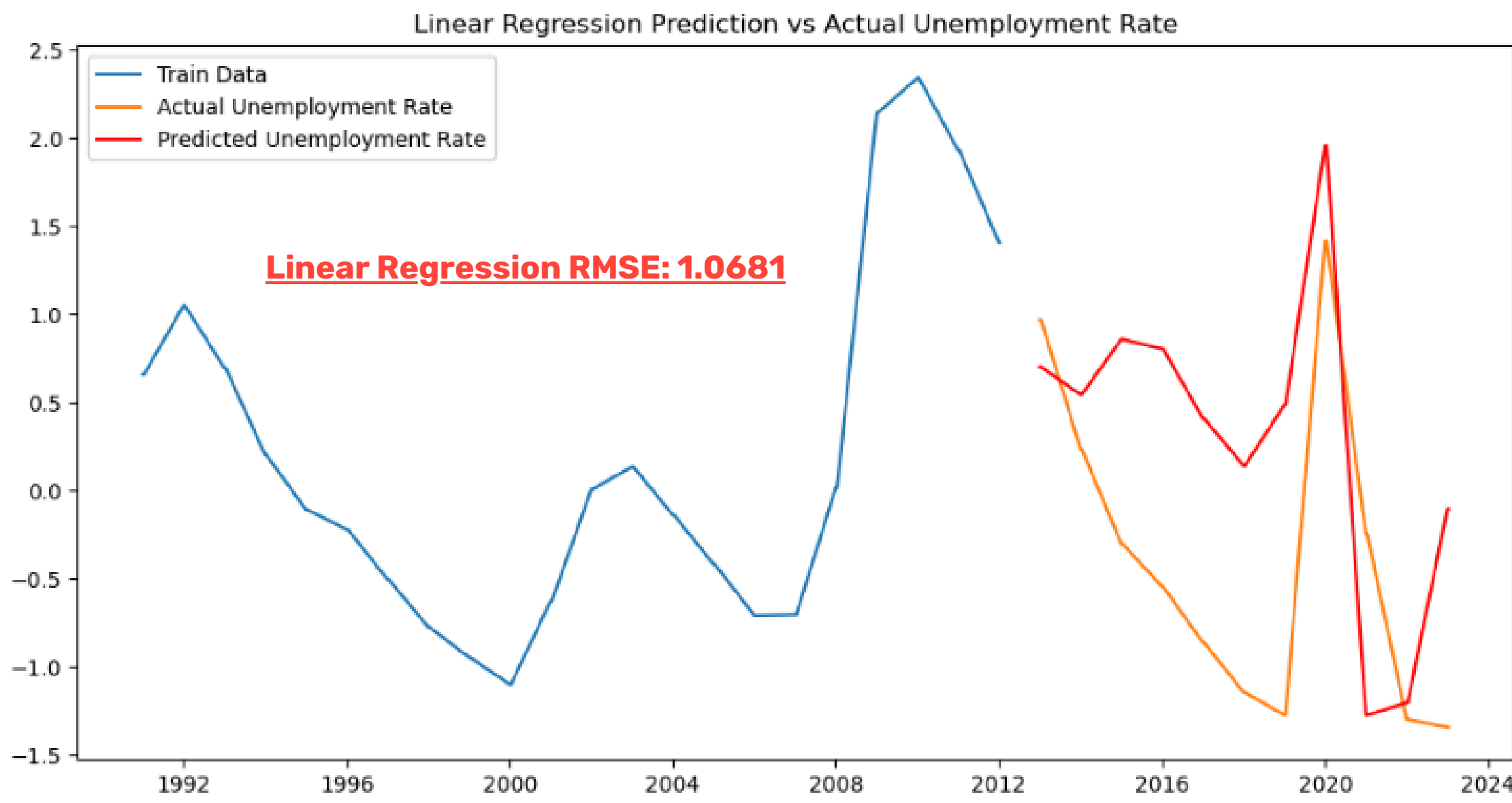


Results

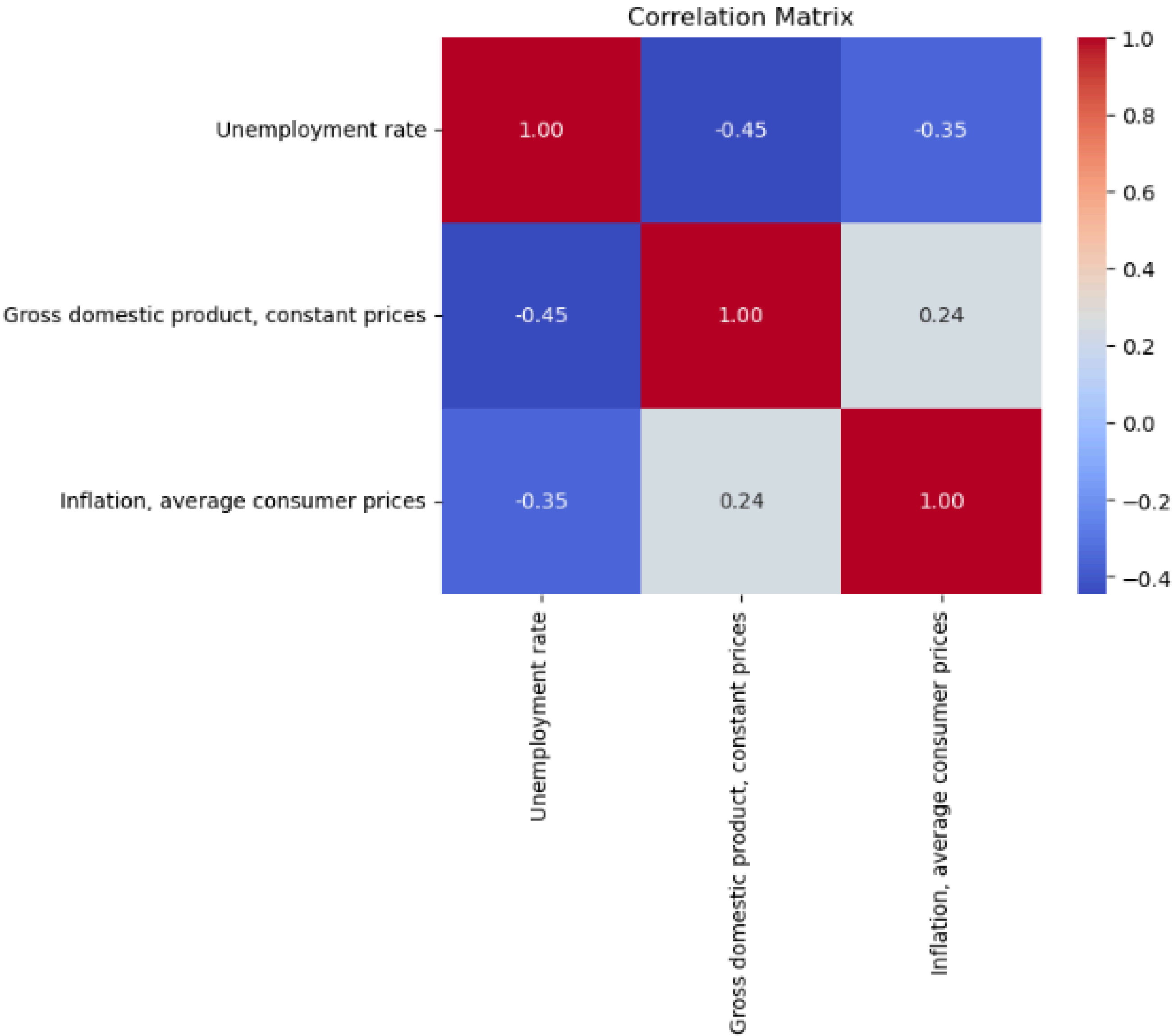
ARIMA Forecast



Linear Regression Prediction



Correlation Analysis



Considerations:

Other factors include technological advancements, labor participation rates, government policies, and global economic trends.

Conclusion

Finding	Implication
Strong GDP-Unemployment correlation	Guides policy decisions
ARIMA forecasts unemployment trends	Useful for long-term planning
Regression is more accurate	Better for short-term predictions