Forecasting U.S. GDP and Inflation Based on the 2025 Tariff Policy Changes

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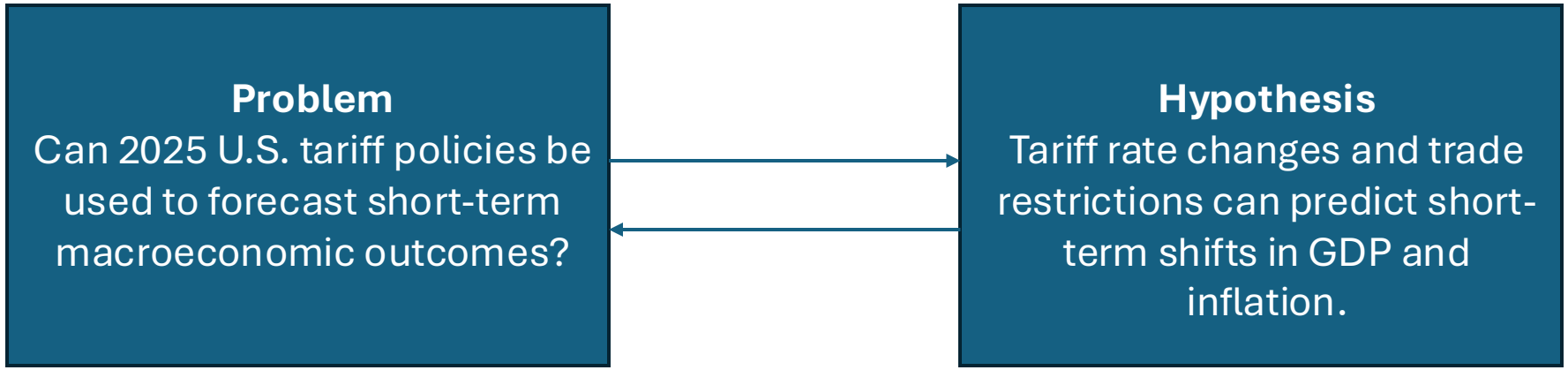
Problem & Hypothesis



Data Analysis Process

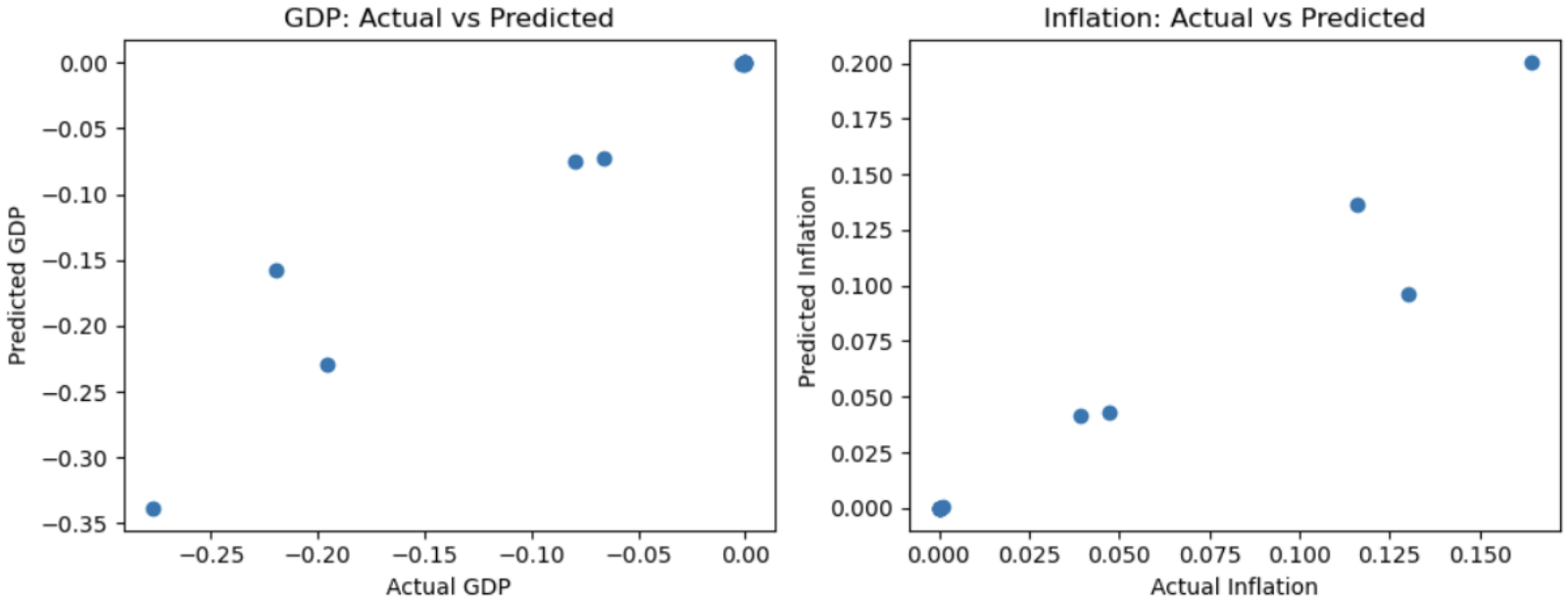
- Data Source: Kaggle Trump Tariff Data 2025 - Compiles key data points related to the impact and policy measures surrounding U.S. tariffs proposed or implemented by the current administration.

- Python libraries: pandas, numpy, re, sklearn, matplotlib

- Steps:
  - Data cleaning
  - Dropped incomplete rows
  - Created numeric columns
  - Train-test-split data 80/20

Model Overview & Evaluation

- Technique: Random Forest Regression
- Metrics:
  - GDP Model: $R^2 = 0.93$, RMSE = 0.025
  - Inflation Model: $R^2 = 0.93$, RMSE = 0.014
- Visual: Scatterplots (Actual vs Predicted)



Simulated Scenario Forecasts

- Hypothetical scenarios inputted using tariff, trade volume, and effective rate
- Table results outputted with GDP & inflation predictions
- Results supporting the hypothesis, suggesting GDP reduction and upward pressure on consumer prices from tariff increases.
- Ex. a 50% tariff affecting $600B in trade could reduce GDP by nearly 0.6%. Inflation scales with trade restrictions, rising from 0.05% to nearly 0.35% across scenarios

	TarrifImpose_clean	affectedTrade(B)	avEffectiveTariffRate	Predicted_GDP	Predicted_Inflation
0	10	150	0.5	-0.077790	0.045713
1	25	300	1.5	-0.221702	0.131281
2	50	600	3.0	-0.591183	0.348550

Limitations & Course of Action

Limitations:

- Small dataset size could lead to overfitting
- No long-term economic or lag effects included
- Limited interpretability with Random Forest

Course of Action:

- Use models to simulate policy impacts before implementation
- Add real-time data and global indicators
- Include economic planning tools for faster insights and real-time forecasting

THANK YOU!

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PRESENTATION

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https://github.com/lyssakline/WGU_MS_Data_Analytics/tree/main/D212%20-%20Data%20Mining%20II