Overview

This repository contains the Matlab code for calculating **NQPF (New Quality Productive Forces)** and a corresponding dataset for testing the code. By following the instructions below, you can run the code to view the results. Additionally, you can test the code with your own balanced panel dataset without modifying file and variable names.

Files in the Repository

1. **NQPF_Code.m**
    - The main Matlab script for calculating NQPF.
    - Uses LSTM model to perform predictions.
    - Outputs results in an Excel file.
2. **Test_Data.xlsx**
    - A sample dataset for testing the code.
    - Includes panel data structured by ID, Variable, and years.
3. **Additional Excel Files**
    - Contains **NQPF** for China's primary, secondary, and tertiary administrative regions.
    - The ratio of actual to predicted GTFP values reflects the NQPF for each region.

Code Testing

1. Place both NQPF_Estimation.m and Test_Data.xlsx in the same folder.
2. Open Matlab and navigate to the folder containing the files.
3. Run the script NQPF_Code.m.
4. Results will be displayed in the Matlab console and saved as Output.xlsx in the same folder.

Custom Testing with Your Data

- To test the code with your own data:
    1. Replace the content of Test_Data.xlsx with your own **balanced panel dataset**.
    2. Ensure your dataset maintains the same structure and variable names as in Test_Data.xlsx:
        - ID: Identifiers for each panel unit (e.g., regions or entities).

    - Variable: The variable of interest for prediction.
    - years: Time dimension for the panel data.
3. Save the file with the same name (Test_Data.xlsx) and rerun the code.

Explanation of Results

The script outputs prediction results in Output.xlsx. This file includes:

- The actual and predicted values for the target variable with the corresponding ID and years.
- If your input is GTFP, then the ratio of actual and predicted values will be an estimation of NQPF.

Notes

- Ensure your data is a **balanced panel dataset** (all IDs have the same number of observations across years).
- The rolling window length (kim) and forecast step (zim) can be adjusted directly in the script to suit your data.

For any issues or questions, please contact the author.