Research Project: Impact of MFN Tariff Shocks on GDP Using Local Projections

# 1. Motivation

Trade policy is a key driver of macroeconomic outcomes. Recent work highlights that exogenous changes in most-favored-nation (MFN) tariffs for one country can be treated as plausibly exogenous trade shocks for its partners. This project explores how such exogenous MFN tariff shocks affect a country's GDP over time.

# 2. Data and Sample

- Tariff data from 'tariffsPairs\_88\_21\_vbeta1-2024-12.dta', covering MFN tariffs by country, product, and year (1988–2021).

- GDP data (log real GDP) from World Bank or Penn World Table.

- Exclude very small countries or outliers. Analyze effects by groups: developed vs. developing.

# 3. Identification Strategy and Treatment Construction

Following Coelli et al. (2022) and Boehm et al. (2023), we construct a shift-share instrument:

Z\_{i,t} = ∑\_{j≠i} ω\_{i,j}^{pre} × ΔMFN\_{j,t},

where ω\_{i,j}^{pre} is the pre-period trade share and ΔMFN\_{j,t} is the change in MFN tariffs. We compute separate shocks for manufacturing and commodity tariffs.

# 4. Empirical Methodology: Local Projections

We use local projections to estimate the dynamic response of log GDP to MFN tariff shocks over a horizon from one year before to five years after:

ln(GDP\_{i,t+h}) - ln(GDP\_{i,t-1}) = α\_i + α\_{t+h} + β\_h Z\_{i,t} + X\_{i,t}'γ + ε\_{i,t+h}

# 5. Sectoral and Heterogeneity Analysis

- Separate estimates for manufacturing and commodities.

- Group comparisons: developed vs. developing countries.

# 6. Implementation Steps

1. Merge tariff and GDP data.  
2. Classify sectors and compute average MFN tariffs.  
3. Compute pre-period trade shares.  
4. Construct exogenous shock Z\_{i,t}.  
5. Run local projection regressions for h = -1 to 5.  
6. Include fixed effects and cluster standard errors.

# 7. Robustness Checks

- Alternative weight bases.  
- Different outcome variables.  
- Excluding major global events.  
- Placebo shocks.  
- Additional controls.

# 8. Extensions and Further Analysis

- Spillovers to neighboring countries.  
- Alternative instruments.  
- Sectoral GDP decomposition.  
- Fiscal/monetary policy responses.  
- Welfare implications and model simulations.