

# Deforestation: A Global and Dynamic Perspective (Farrokhi, Kang, Pellegrina, and Sotelo 2025)

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July 8, 2025

# Summary

- Important and ambitious
- Deforestation with global trade and dynamics
  - Structural change and comparative advantage
  - Extent, location, and timing of deforestation
- Global reductions in trade costs can reduce global deforestation
  - Eliminating tariffs has limited impacts on global forests
  - But reallocates forests across countries

## Two polar approaches in environmental economics

- Macro: global structural model of many industries (FKPS)
- Micro: local randomized experiment in one industry
- General vs. partial equilibrium (FKPS model GE effects)
- Reliance on model vs. data (FKPS match features of data)
- External vs. internal validity (FKPS calibrate global parameters)

# Why focus on deforestation?

- ① Important source of global carbon emissions
- ② Rich observed heterogeneity across space, over time, and on the margin
- ③ Classic questions: trade and environmental outcomes, Borlaug hypothesis

# 1. Dynamics

- Important component of the paper
  - Because global point is more common (trade connects countries)
- Dynamic components as stated
  - Perfect-foresight landowners and workers (with population growth)
  - Stock of productive land vs. flow of deforested land (with forest regrowth)
- Are dynamics really, really needed?
  - At each time  $t$ , as if static with fixed employment of labor and land
  - Distinguishing between  $t$  subscripts and intertemporal choices
  - Could emphasize the value of the time path of deforestation

## 2. Modeling and estimation (minor)

- Agriculture only uses land; manufacturing and land-clearing only use labor
  - But agriculture uses some labor, and manufacturing uses some land
- Usable agricultural land “depreciates” back into forest
  - But maybe depreciation only happens if land is not used for production
- Separate trade costs into costs of policy and distance
  - But trade policy is endogenous

### 3. Other directions for future work

- Global offset markets
  - Domestic and global distributional effects
  - Taking additionality seriously
- Political economy of conservation
  - Domestic and global political challenges
  - Two-level games (Putnam 1988)
- Rich dynamic, spatial modeling of deforestation
  - Domestic spatial + global trade linkages
  - Dynamic models for dynamic narratives