



# **Taxes**

**by**

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# GTAP 6

- Introduce income tax and factor employment tax data.
- Combine with preexisting data for factor-based assistance to agriculture.
- Attract MIT critique.

# Sources of Divergence

- tax treatment: allocate personal income tax to labor only all to all factors?
- revenue estimates
- tax base estimates

# MIT Contribution

- variables:
  - revenues
  - rates
  - bases
- methodology:
  - OECD
  - OECD + non-OECD
    - US Import Administration
    - World Bank

# Accounting

- $\text{total\_tax\_base} \approx \text{factor income}$
- $\text{factor\_income} = \text{GDP} - \text{depreciation} - \text{indirect\_tax} + \text{net\_foreign\_earnings}$
- our constraints:
  - Get GDP right.
  - Get depreciation plausible.
  - Get indirect taxes wrong.
  - Ignore net foreign earnings.

# MIT Tax Bases

- OECD:
  - Capital: gross operating surplus
  - labor: wages + supplements
- OECD + non-OECD
  - capital: gross capital formation
  - labor:  $\text{wage\_rate} \times \text{labor\_employment}$

# Divergences

- Revenues align well, tax bases poorly:

	OECD	WB	GTAP
AUS, K	91	84	131
FRA, K	291	269	572
DEU, K	407	370	725
MEX, L	202	183	60

# Errors in Bases

- GTAP:
  - error in indirect tax revenue
  - neglect of foreign income receipts and payments
  - misallocation of owner-operator labor
- MIT:
  - GCF for GOS
  - questionable wage rates
  - don't add up



# Strategy

- Neither GTAP nor MIT tax base estimates command great credence.
- To adopt MIT tax bases, we would need to change GDP, depreciation, or indirect taxes.
- If we don't adopt MIT tax bases, we cannot adopt both MIT revenues and MIT rates.
- We prefer to adopt MIT revenues.

# Revenues $\nu$ Rates

- In the standard GTAP model, income tax is non-distortionary.
- We don't attempt to represent marginal as distinct from average tax rates.
- We don't know what other data ours may be combined with.
- The GTAP database is a collection of flows.
- Piecemeal reform strategy: Get each flow right.

# Stance

- Adopt MIT methodology for tax revenues.
- Adopt MIT tax treatment.
- Don't adopt MIT tax bases.
- Do explore strategies for improving the income side of the GTAP national accounts.