Measuring regional and global integration

Foundations of structural gravity

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Module 2 — Part 1

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This module

- From to naive to general and structural gravity

  $\rightarrow$ bilateral and multilateral resistance

- Refresher on CES preferences

- Armington-Anderson-type gravity

Naive and general gravity

Naïve gravity expresses bilateral trade as

$$X_{ij} = G \, Y_i^a \, Y_j^b \, \phi_{ij}$$

$\rightarrow$ imposes implausible restriction that ϕ_{ij} is a constant (Krugman, 1995)

General gravity

Set of models that yield bilateral trade equations that can be expressed as

$$X_{ij} = G \, S_i \, M_j \, \phi_{ij}$$

- S_i, M_j characteristics of exporter i and importer j
- $0 \leq \phi_{ni} \leq 1$ bilateral resistance between destination market j to exporter i
  $\rightarrow$ combines trade costs with their respective elasticity
- multiplicative separability: easy estimation
  $\rightarrow$ nests most modern microfoundations
  $\rightarrow$ ...but not all: not linear or translog demand systems without Pareto