

Non-Homothetic Gravity

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August 14, 2014

Core of the paper

- Bilateral trade between exporter i and importer j in sector h :

$$\log X_{ij}^h \propto \log Y_i + \underbrace{\theta^h \log(T_i^h - w_i)}_{\text{comp. adv.}} \quad (\text{EXPORTER})$$

$$+ \theta^h a^h \left(\underbrace{\log L_j}_{\text{mkt size}} + \underbrace{\frac{\eta^h b_j}{\alpha} \log y_j}_{\text{pc. income}} + \underbrace{\frac{\sigma^h - \eta^h}{\sigma^h - 1} \Phi_j^h}_{\text{closeness}} \right) \quad (\text{IMPORTER})$$

$$- \underbrace{\theta^h \log d_{ij}^h}_{\text{iceberg}} - \underbrace{\left(1 + \frac{\theta^h}{\sigma^h - 1}\right) \log f_{ij}^h}_{\text{entry cost}} \quad (\text{BOTH})$$

- Primitives: $T_i^h, w_i, d_{ij}, f_{ij}$,
- Endogenous objects: $X_{ij}^h, Y_i, L_j, y_j, \Phi_j^h$
- Key parameters: $\theta^h, \sigma^h, \eta^h$

What are the main results?

- Bilateral trade between exporter i and importer j in sector h :

$$\log X_{ij}^h \propto \log Y_i + \underbrace{\theta^h \log(T_i^h - w_i)}_{\text{comp. adv.}} \quad (\text{EXPORTER})$$

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$$- \underbrace{\theta^h \log d_{ij}^h}_{\text{iceberg}} - \underbrace{\left(1 + \frac{\theta^h}{\sigma^h - 1}\right) \log f_{ij}^h}_{\text{entry cost}} \quad (\text{BOTH})$$

- Income of exporter Y_i and importer $Y_j = y_j L_j$ affect trade differently.
- Market size L_j and income y_j of importer affect trade differently.
- Effects magnified or dampened by sectoral elasticities.

What is the role of each ingredient?

1 Non-homothetic preferences:

- Why? In data, income elasticities are not unity and vary by sector.
- How? Different elasticities within and between sectors $\{\sigma^h, \eta^h\}_{h=1}^N$.

2 Monopolistic competition:

- Why? To identify within sector elasticity $\{\sigma^h\}_{h=1}^N$.
- How? σ^h affects trade patterns via markups $\frac{\sigma^h}{\sigma^h-1}$.

3 Producer heterogeneity at sector level:

- Why? Feature of the data with implications for welfare (via reallocation).

4 Comparative advantage:

- Why? Framework to measure relative strength of demand vs. productivity.

Comments: Theory

- **Isolate the role of each ingredient to generate results.**
- **Turn on and off ingredients.**
 - Explain the interactions.
 - Compare with literature.
 - Highlight the contributions of the paper.
- **Why are non-homothetic preferences the way to go?**
 - Orthogonal evidence that can support their use?
 - Why preferences and not technology?

Comments: Empirical

- **Two empirical components:**

- Estimation of sectoral elasticities.
- Decomposition of productivity and demand effects for US and China.

- **Absence of GE effects:**

- Wages should reflect productivity gains: not in this model.
- Country w_i pinned down by homogenous freely traded good.
- Trade is balanced through the free traded homogenous good.

- **How do these assumptions affect inference and interpretation of results?**

Further comments

- Interesting to explore evolution of cross-sectional moments of elasticities.
- For example:

$$\text{Var}_t(\theta_t^h), \quad \text{Var}_t(\sigma_t^h), \quad \text{Var}_t(\eta_t^h)$$

- Have elasticities got more concentrated or dispersed?
- What would this imply for bilateral trade?