Understanding Interstate Trade Patterns

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Highlights

- Interstate trade patterns are investigated within the U.S.

- The following elasticities are all identified:
  - Elasticity of substitution across goods
  - Elasticity of substitution across varieties of each good
  - Elasticity of distance for each good.

- Elasticity of substitution estimates are lower.

- Elasticity of distance estimates are higher.

- Home-bias effects are decreasing over time.
Bilateral Interstate Trade at the Good Level

- Under CES, the bilateral trade value from state $i$ to state $r$ for good $j$ is obtained as:

$$\log \left( X_{r,i}^j \right) = \log \left( \left( P_{i,i}^j \right)^{1-\eta^j} \right) + \log \left( P_r^j \right)^{\eta^j} C_r^j \right)$$

- $\eta^j$ is the elasticity of substitution across varieties of good $j$
- $\delta^j$ is the elasticity of distance
- $\eta^j$ versus $\delta^j$ are identified using both trade and production-side data.
- Commodity Flow Survey data (2007; 2-digit) are used for trade.
- Gross markup data (from Census Bureau) are used for estimating $\eta^j$'s.
- The average $\eta^j$ (across industries) is estimated as 3.01.
- The average $\delta^j$ (across industries) is estimated as 0.45.
Aggregate Interstate Trade at the Good Level

- Under CES, the good-level import value of state $r$ for good $j$ is obtained as:

$$\log (M^j_r) = \left( 1 - \epsilon \right) \times \log (P^j_r) + \log \left( \left( P_r^j \right)^\epsilon C_r \right) + \log \gamma^j_r$$

- $\epsilon$ is the elasticity of substitution across goods
- $P^j_r$ is constructed using estimated variables/parameters according to:

$$P^j_r \equiv \left( \sum_i \theta^j_{r,i} \left( P^j_{i,i} \left( D^j_{r,i} \right)^{\delta^j} \right)^{1-\eta^j} \right)^{\frac{1}{1-\eta^j}}$$

- $\epsilon$ is estimated as 1.09.