

EC3355 International Trade

Problem Set 2: Gravity model

Read the paper by Chen and Jacks (2012) on trade and immigration

1. The authors examine the change in import varieties in Canada. Rather than treating the US as a single trade partner they look trade with individual states. Why is this a useful approach (besides the reasons the authors provide)?
2. Which two factors contributed to growth in import variety in the US?
3. How does immigration contribute to growth in import variety?
4. The study shows that import substitutability is high for agricultural and mineral products. Why do you think this is the case?

Consider the following general gravity model:

$$T_{ij} = g \frac{M_i^\alpha M_j^\beta}{D_{ij}^\theta}$$

5. Let's say that we are interested in knowing α , β , and θ . How do we estimate this model?
6. Explain why distance has such a large effect on trade in the gravity model.

Table 1: Trade relations

	Belgium	China	Denmark	Estonia
Belgium	-	1	1	0
China	1	-	1	0
Denmark	1	1	-	1
Estonia	0	0	1	-

Consider the trade relations given in table 1 where 1 indicates trade and 0 no trade.

7. China trades with both Denmark and Belgium. Which country-pair do you think has the largest trade flow?
8. Does an increase in Chinese GDP affect Estonian trade?
9. Canada and Australia are similar in terms of their main language, institutions, and history and also have populations of similar size. However, Canada's trade to GDP ratio is about 20 percentage points larger than that of Australia. What would explain this?
10. Brazil and Mexico have two very different trading patterns. Brazil trades equally with the US and EU while Mexico trades mainly with the US. Use the gravity model to explain these differences.