I. Motivation

Figure 2.1 from textbook (attached):
- Biggest trading partners in 2003
- Biggest is Canada, followed by Mexico.
- This suggests that proximity (lack of distance) really matters
- Other factors that matter: SIZE. We trade more with bigger countries.

See this better in Figure 2.2 from textbook (attached)
- We trade more with big economies
- We trade more with economies that are closer

II. Framework

The gravity model takes the insights from the two figures discussed above and fits them into the following equation:

\[ T_{ij} = AxY_iX Y_j / D_{ij} \]

- \( Y_i \) = country i’s GDP
- \( Y_j \) = country j’s GDP
- \( D \) = distance between country i and j
- \( T_{ij} \) = volume of trade between country i and j

\( T \) rises as product of two country’s GDPs rises
\( T \) falls as distance between two countries rises

More general form:

\[ T_{ij} = Ax (Y_i^a) X (Y_j^b) / D_{ij}^c \]

If we take logs of (2) we get the following:

\[ \log(T_{ij}) = \log(A) + a \log(Y_i) + b \log(Y_j) - c \log(D_{ij}) \]

We can rewrite (3) as the following, which is how it is typically estimated:

\[ \log(T_{ij}) = \log(A) + a \log(Y_iY_j) - c \log(D_{ij}) \]

III. Applications: Andrew Rose and the impact of a common currency on trade