Purchasing Power Parity and the Real Exchange Rate

(Econ 513 lecture outline)

- E - price of foreign currency in terms of domestic
- PPP
  - law of one price (LOP) $P_i = EP_i^*$
  - price levels $\sum P_i = E \sum P_i^*$
  - real exchange rate $q = \frac{EP^*}{P}$ - price of foreign goods in terms of domestic goods
  - $PPP \Rightarrow q = 1$
- Evidence on PPP
  - prices of identical goods vary across countries
- Deviations from PPP
  - barriers to trade
  - monopoly power
  - price stickiness
  - presence of nontradables

    If q is measured using price indices that include tradables and non-tradables and LOP holds for tradables, then the real exchange rate can be written as:

$$q = \left(\frac{P_N^*/P_T^*}{P_N/P_T} \right)^{\beta} \tag{1}$$

    Equation (1) tells us that the real exchange rate in this case depends on the relative price of nontraded to traded goods P_N/P_T in the foreign and home countries:the internal terms of trade. A rise in relative price of nontraded goods at home, for an unchanged relative price of nontraded goods overseas causes an appreciation of the real exchange rate.

Factors affecting P_T/P_N:

  - relative productivity in T and N sectors
  - if T is capital intensive; $K/L \uparrow \Rightarrow P_T/P_N \downarrow$

- Relative PPP
  - $$\frac{dq}{q} = \frac{dE}{E} + \frac{dP^*}{P*} - \frac{dP}{P} \tag{2}$$
  - relative PPP $\Rightarrow q = constant$
- Evidence on relative PPP
  - RER flutuates, only in the very long run appears constant
- Bottom Line
  - nominal exchange rates fluctuate much more that relative price levels
- Approaches to Equilibrium q
  - PPP
  - relative PPP
  - modifications to PPP
  - trade elasticities