Agricultural Trade: Exchange Rate Volatility vs. Uncertainty

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Post-Bretton Woods

- Foreign exchange rates highly volatile after collapse of Bretton Woods system in 1973
- Despite view that volatility would diminish as agents gained experience with flexible exchange rates, fluctuations increased after 1980 (Hakkio, 1984)
- By end of 1980s, growth rate of international trade among industrial countries had declined by more than 50 percent (De Grauwe, 1988)

Exchange Rate Volatility and Trade

- **Exchange rate volatility has potential to undermine proper functioning of world economy (Maskus, 1986):**
  - **uncertainty about profits from international trade**
  - **may restrict international capital flows**
  - **agents add a risk premium, thereby raising prices of traded goods**
- **Notion that exchange rate volatility has negative effect on international trade due to agents' risk-aversion is intuitively-appealing, and has some grounds in theory**

Exchange Rate Volatility and Trade

- **Absent insurance, exchange rate volatility may reduce volume of trade e.g., Ethier (1973), Baron (1976), Hooper and Kohlhagen (1978)**
- **Empirical work, has found conflicting results for sign on volatility (Bahmani-Oskooee and Hegerty, 2007) – also reflected in research on agricultural trade:**

  (i) Anderson and Garcia (1989-US bilateral soybean trade), and (ii) Pick (1990-US bilateral agricultural trade), find evidence for negative effect, (iii) Langley et al. (2000-Thai agricultural trade) find evidence for positive effect

Exchange Rate Volatility and Trade

- What might explain these contradictory findings?
- de Grauwe (1988) shows impact of mean-preserving spread in exchange rate, $\tilde{e}$, on expected marginal utility of trade, $U'_f\tilde{e}$, depends on *relative* risk aversion, $R = U''_f\tilde{Y}_f \,/\, U'_f$
- Assuming *constant* relative risk aversion, if $R>1$ ($R<1$), $d^2U'_f\tilde{e} \,/\, de^2 > 0$ ($d^2U'_f\tilde{e} \,/\, de^2 < 0$), i.e., greater exchange rate risk $\tilde{e}$ increases (decreases) trade
- Not unsurprising, therefore, empirical literature is ambiguous on effects of exchange rate volatility

Exchange Rate Uncertainty

- ***A priori*, flexible exchange rates take care of external imbalances, macroeconomic policy being targeted at domestic objectives (Obstfeld, 1998)**
- **If PPP holds, real exchange rates should be mean-reverting (MacDonald, 1989)**
- **Speed of convergence very slow (Rogoff, 1996) – exposing agents to uncertainty that is difficult to hedge**
- **De Grauwe (1988) and Perée and Steinherr (1989), early studies finding *medium term* exchange rate uncertainty adversely affects trade flows**

Agricultural Trade and Uncertainty

- Using panel data for 10 developed countries over period 1974-95, Cho, Sheldon and McCorriston (2002) found exchange rate uncertainty had largest negative impact on agricultural trade
- Kandilov (2008), using different index of uncertainty, and data over period 1974 to 1997 replicate these results, but also find negative effect is larger for developing country agricultural exporters
- Confirms prescience of Schuh's (1974) view that an over-valued dollar in post-WWII period may have acted as a disincentive to US agricultural exports