Real Exchange Rate Dynamics

The Role of Investment in Quality

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• The puzzles for the mainstream literature
• What explains then the reality?
• Models with vertical product differentiation
• Our contribution
• Projections and policy considerations
Mainstream literature predictions

Obstfeld and Rogoff (1996):
• Productivity growth (skewed towards tradables)
• GDP convergence
• Export share increase
• Initial trade balance deficit; later trade balance surplus
• Real exchange rate appreciation (through H-B-S effect)
Stylized facts
Doubtful mechanism of appreciation

- The H-B-S effect is empirically very small: [Mihaljek and Klau (2006) or Flek et al. (2003)]
- The real exchange rate in tradables appreciates as well;
- Hinting at increasing quality content in price indices;
What mechanism works in reality?

- Active vertical investment margin – shift towards high-tech products

- Massive FDI inflow – facilitating the “know-how” transfer – resulting in an increase in quality of products
Models with ‘quality effects’

Melitz (2003) and Ghironi and Melitz (2005):

- 2C DSGE with endogenous tradability of goods
- Empirical real exchange rate appreciates due to relatively greater expansion in number of product varieties in converging economies.
- But simulations for large set of parameters showed that ...
Encouraged by:

- Fabrizio et al. (2007): the export market share increase due to an increase in unit value of export – quality matters
- the fact that statistical offices do not sufficiently account for quality changes, Ahnert and Kenny (2005) ECB Occasional WP 15.

We propose an extension to Ghironi and Melitz (2005) model …ECB WP740, ECB WP791, and IMF WP 116
Our contribution

- Introduce an endogenous vertical investment margin
- Empirical real exchange rate appreciates due to varieties expansion and explicit quality increase
- We perform simulations for a large range of parameters and find the extension promising …
Real exchange rate projections

- Czech Republic - actual
- Czech Republic - projected
- Hungary - actual
- Hungary - projected
- Poland - actual
- Poland - projected
- Slovakia - actual
- Slovakia - projected
Probability of inflation criterion fulfillment

$P(t > \pi | \sigma, \eta, \Delta \ln s = 0)$

Czech R., $\sigma = 0.0085$
Hungary, $\sigma = 0.0071$
Poland, $\sigma = 0.0083$
Slovakia, $\sigma = 0.0078$
Thank you for your attention.