Discussion of Kikuchi

Balassa–Samuelson in the Long Run: Qualitative Success, Quantitative Limits

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Overview

- "Balassa-Samuelson" refers to an explanation offered for a particular empirical observation.
  - I'll give an example.
- Quickly describe the B-S hypothesis and the other hypotheses that exist
  - Presumably the answer is a mixture of B-S and the other hypotheses.
- Some comments on the paper

Observation

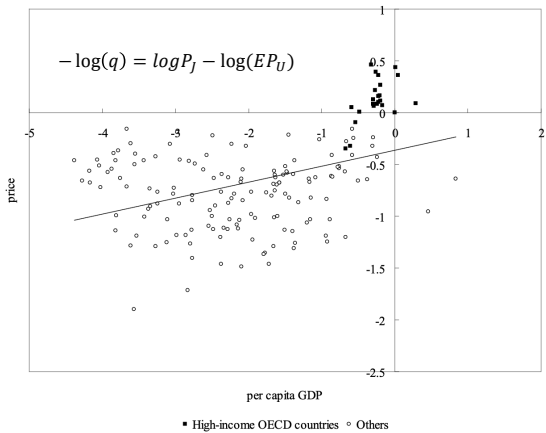
- Rich countries seem to have higher prices than relatively poor countries (adjusting for nominal exchange rates).
  - Having someone clean your house in a low income country is much cheaper than it is in New York.
- To quantify this, consider:
  - Price index of the reference economy, U, P_U
  - Price index of country J, P_J
  - E ~ quantity of country J money needed to purchase a unit of the reference country money.
  - Relative price: $q_J = \frac{EP_U}{P_J}$ ('real exchange rate for country J against U).

Observations

Eiji Fujii, CES_IFO, 2013

Figure 2. Cross-country price-income relationship

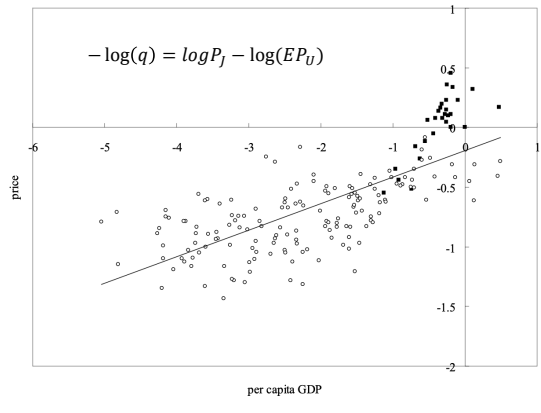
A. The 1990 data



Observations

Eiji Fujii, CES_IFO, 2013

B. The 2005 data



Notes: Price and income are both in logged relative terms to the US observation.

Explanations

- There are two potential types of explanations: Demand-side and Supply-side.
- Suppose there are two types of goods, T, N:

$$P_i = \alpha_{i,T} P_{i,T} + \alpha_{i,T} P_{i,N}, i = J, U.$$

- Demand side explanations:
  - Engle curves: as people get richer they buy more expensive things.
    - Weights shift towards items with high price.
  - Opportunity cost of shopping is high for rich people, so they are price inelastic.
    - The Law of Diminishing Elasticity of Demand (Harrod, 1936)
    - Markups go up as income goes up, in heterogeneous ways across goods (Kunal Sangani, 2022).

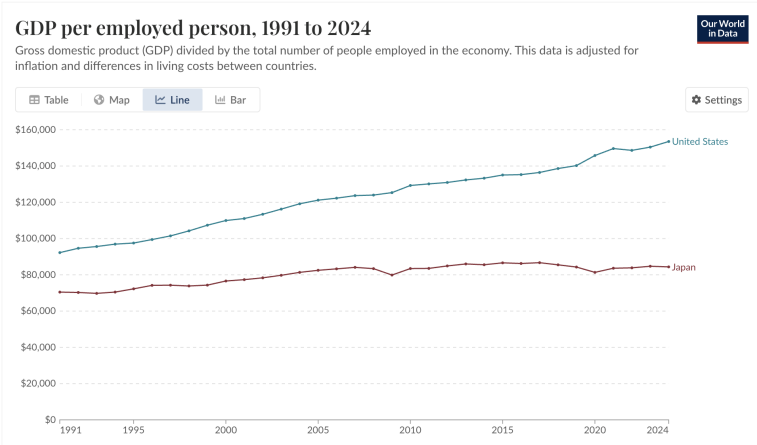
Balassa-Samuelson: Supply Side Explanation

- Consider J ˜ Japan, U ˜ US.
- Real Japanese exchange rate:

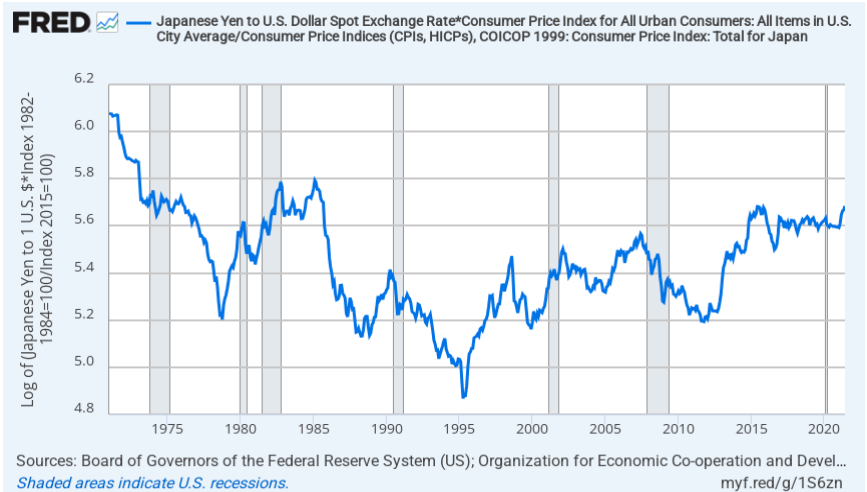
$$\begin{aligned}\frac{EP_U}{P_J} &= \frac{\alpha_{U,T}EP_{U,T} + \alpha_{U,N}EP_{U,N}}{\alpha_{J,T}P_{J,T} + \alpha_{J,T}P_{J,N}} \\ &= \overbrace{\frac{EP_{U,T}}{P_{J,T}}}^{\text{terms of trade}} \times \frac{\alpha_{U,T} + \alpha_{U,N}P_{U,N}/P_{U,T}}{\alpha_{J,T} + \alpha_{J,T}P_{J,N}/P_{J,T}} \\ &= \frac{\alpha_{U,T} + \alpha_{U,N}A_{U,T}/A_{U,N}}{\alpha_{J,T} + \alpha_{J,N}A_{J,T}/A_{J,N}}\end{aligned}$$

- Suppose that T=manufactured goods, N=services.
- Engine of growth is productivity of manufactured goods, which are T (GHK, AER1997)
- Japan pre-1990 grew faster than US and post-1990 it grew (a little) slower.
- Prediction: q trends down pre-1990, rises post-1990.

Japan & US post 1990



Balassa-Samuelson in Time Domain Works



Comment on the Econometrics

- Finds a characterization using panel data (time series of cross sections) which neatly displays data on real exchange rates and income.
  - Deviates from earlier studies in including time fixed effects. In the derivation for Japan and US, I set terms of trade to a constant.

$$\ln q_{i,t} = \beta \ln \left(\frac{A_{U,T,t}/A_{U,N,t}}{A_{i,T,t}/A_{i,N,t}} \right) + \mu_i + \tau_t + \varepsilon_{i,t}$$

  - By including time fixed effect, τ_t, gets $\beta > 0$ and tightly estimated.
- This could use more explanation, Japan exported trinkets pre-1990, exported Lexuses post-1990.
  - Suggests an omitted variable on right side, which is a time-dependent country-specific effect 'hiding' in $\varepsilon_{i,t}$.
  - The missing terms of trade variable must be correlated with the productivity shocks on right hand side, leading to bias in β.
  - I'm assuming that what is desired from econometrics is $\frac{\partial q_{it}}{\partial A_{i,T}}$.

Comment on the Model

- Paper builds an large world trade model which is close to the Balassa-Samuelson framework.
  - Many countries, many goods, additional variables like iceberg shocks.
  - Do iceberg costs provide a 'theory of the error term' in the exchange rate equation?
- It is very interesting that when you feed estimated productivity shocks you get:
  - Way too little variation in real exchange rates.
  - Also, there is a strong contrast with macro.
    - In flexible price macro models you overshoot volatility in the wage and get too little volatility in variables of interest like employment.
    - In the trade model things are similar in that wage volatility is very important for transmission to variables of interest like the real exchange rate.
    - But, in the trade model it's greater volatility in the wage that you want, both to have a realistic wage process as well as to get real exchange rate volatility up.

Concluding Remark

- I learned a lot from this paper. Amazing breadth.
- Well Done!