Business Cycles through International Shocks: A Structural Investigation

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Highlights

- Output volatility is decomposed into finance and trade shocks.
- Cross-country comparisons are made for 16 countries.
- On average, output fluctuations are explained:
  - 50% by international finance shocks
  - 20% by international trade costs shocks
  - 20% by monetary policy shocks
  - 10% by technology shocks
- The results are opposed to studies favoring technology shocks:
  - Lubik and Schorfheide (2007)
  - An and Schorfheide (2007)
- The results are in line with terms-of-trade studies:
  - Mendoza (1995)
  - Kose (2002)

The Model

- The open-economy IS curve is given by:

$$y_t = E_t\left(y_{t+1}\right) - \left(i_t - E_t\left(\pi_{H,t+1}\right)\right) + E_t\left(\Delta\tau_{t+1}\right)$$

- The open-economy New-Keynesian Phillips curve is given by:

$$\pi_{H,t} = \beta E_t\left(\pi_{H,t+1}\right) + \lambda_y\left(y_t - z_t + \tau_t\right)$$

where

$$\lambda_y = \frac{(1-\alpha)(1-\alpha\beta)}{\alpha}$$

- The nominal interest rates are determined by a Taylor rule:

$$i_t = (1-\rho_i)\left(\chi_\pi E_t\left(\pi_{t+1}\right) + \chi_y\left(y_t - z_t + \tau_t\right)\right) + \rho_i i_{t-1} + v_t^i$$

- The effective terms of trade given by:

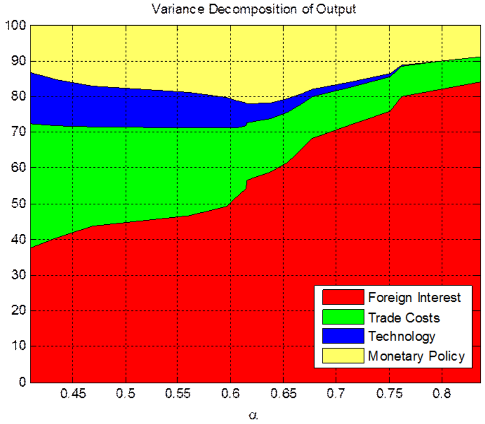
$$s_t = \left(i_t^* - E_t\left(\pi_{F,t+1}^*\right)\right) - \left(i_t - E_t\left[\pi_{H,t+1}\right]\right) + E_t\left[s_{t+1} - \Delta\tau_{t+1}\right]$$

Estimation

- Economist Intelligence Unit Country Data (EIUCD).
- The quarterly period over 1994:Q1-2008:Q4 for 16 countries.
- The estimation is achieved by a Bayesian approach.
- The list of countries:
    - Australia, Canada, Costa Rica, Finland, Germany, Indonesia, Italy, Japan, Norway, Singapore, South Africa, Sweden, Switzerland, Taiwan, Thailand, United Kingdom.
- The results show that
    - International shocks explain around 70% of output fluctuations.
    - International trade costs are econometrically significant in explaining output volatilities.
    - Markup shocks are insignificant.

Variance Decomposition of Output

- The variance decomposition of output across 16 countries
  - with respect to price stickiness α



- See the paper for more figures like this one.