Business Cycles through International Shocks: A Structural Investigation

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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:
  \[ y_t = E_t (y_{t+1}) - (i_t - E_t (\pi_{H,t+1})) + E_t (\Delta \tau_{t+1}) \]

- The open-economy New-Keynesian Phillips curve is given by:
  \[ \pi_{H,t} = \beta E_t (\pi_{H,t+1}) + \lambda_y (y_t - z_t + \tau_t) \]
  where
  \[ \lambda_y = \frac{(1 - \alpha)(1 - \alpha \beta)}{\alpha} \]

- The nominal interest rates are determined by a Taylor rule:
  \[ i_t = (1 - \rho_i) \left( \chi_\pi E_t (\pi_{t+1}) + \chi_y (y_t - z_t + \tau_t) \right) + \rho_i i_{t-1} + \nu_t^i \]

- The effective terms of trade given by:
  \[ s_t = (i_t^* - E_t (\pi_{F,t+1}^*)) - (i_t - E_t [\pi_{H,t+1}]) + E_t [s_{t+1} - \Delta \tau_{t+1}] \]
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.
The variance decomposition of output across 16 countries with respect to price stickiness $\alpha$

See the paper for more figures like this one.