

**Discussion of: “An Estimated Two-Country DSGE Model for the Euro Area and the US Economy”  
by G. de Walque, F. Smets and R. Wouters**

Nooman Rebei (Bank of Canada)

July 10, 2006

# Main Contributions

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The Model

Empirical Evaluation

- In the present paper the authors develop and estimate a DSGE model of two open economies that tracks both the US and the Euro zone time-series.
- The model is suitable for forecasting, policy evaluation, and studying global shocks.
- Oil shocks (this could explain the positive international comovements).
- The model is estimated using Bayesian techniques.
- Remarkable contribution!

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Why too many  
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- The authors simplify the model by not considering more detailed sectoral production.
- Ortega and Rebei (2006) show that traded-goods sector and non-traded-goods sector have different dynamics.
- They estimate different parameters for each sector (e.g. degree of price stickiness and labor share).
- Based on the welfare implications, the degree of price rigidity in each sector and the elasticity of substitution in the final good are crucial for monetary policy.



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- This is not a problem if the shock has a structural interpretation. But...
- It is a problem if we want to “correct” for the model weaknesses, then shocks can be interpreted as measurement errors.
  1. example 1: The shock on the UIP condition.
  2. example 2: The effect of multiple adjustment costs. This tends to imply too much overall smoothness... One solution is to include “adjustment cost shocks”.
- What if these shocks are not orthogonal? (see Ireland JEDC 2004)

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3 models are estimated (I: low elasticity; II: high elasticity; and III:  $s_t$  is exogenous (no UIP))

- In the models with UIP there is a risk premium shock that shows up only in this condition. This shock is explaining most on the volatility of  $s_t$ . Table 4 doesn't show why statistically III is preferred to I and II. Then, why  $ML_{noUIP} \gg ML_{UIP}$ ?
- The marginal likelihood seem to be sensitive to the elasticity of substitution (high versus low). This parameter should be estimated, then do some sensitivity exercises.

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- Yet I am not convinced that this exercise is informative:
  1. Country specific fluctuations are mainly explained by local shocks (about 95% in the US and 97% in the Euro area for  $y_t$ ).
  2.  $s_t$  is mainly explained by the open economy shocks.
  3. Oil price innovations are not playing a big role. Therefore, the model is not able to account for the positive comovements between  $y_t$  and  $y_t^*$ .
  
- To answer this, the authors should
  1. estimate the model by constraining the share of imports to be zero (Smets and Wouters2005) and test if there is a gain from considering a two-country model.
  2. estimate the model with and without oil shocks and look at the behavior of TFP.

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- Compare the marginal likelihood of the model and the BVAR
- Compare the IRFs from the model and from a VAR given the oil shock dates identified by Hamilton (1983).
- In the data used there is a period of high interest rate and inflation volatility between 1979Q4 and 1982Q4. In addition, there was a decline in volatility for many macro variables during the late 80's and early 90's in many countries.

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