

**Discussion of “Empirical Evaluation of Open
Economy DSGE Models Using VAR Estimates
of Exchange Rate Pass-Through”
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Summary of the Paper

- This paper uses Monte Carlo techniques to assess the reliability of impulse responses of prices to a UIP shock in evaluating the New Keynesian small open economy models with incomplete pass-through.
- A large number of artificial datasets, generated from a SOE DSGE model, are used to estimate a structural VAR. Then, impulse responses of prices to a UIP shock in the VAR are compared to those generated from the DSGE model.
- The paper compares two different VAR specifications: (1) a first-differenced VAR and (2) a VECM that includes cointegration relations implied by the DSGE model.

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- The main results are:
 - The estimates of a VAR in first differences exhibit a systematic downward bias, even in the VAR with a large number of lags;
 - Estimates of a VECM are accurate;
 - Standard cointegration tests are unable to detect the cointegration relations implied by the DSGE model.
 - Does the paper evaluate a VAR model or a DSGE model?

Related Literature

- Chari, Kehoe and McGrattan (2005), a closed economy model, the paper focuses on the responses of hours worked to a technology shock. Not favorable to the SVAR approach: The specification derived from this approach is misspecified when the data is generated from a structural model.
- Christiano, Eichenbaum, and Vigfusson (2006), a closed economy model, the paper focuses on the responses of hours worked to technology shock. Favorable to the SVAR approach. For the sampling theory question, the approach is appropriate.

Features of the model

- A New Keynesian SOE Model with nominal wage and price stickiness, but with no capital. Nominal rigidities are associated with changing the relative inflation rates. Habit formation in consumption. The model includes only UIP and markup shocks.
- Two domestic goods: A non-tradable final consumption good and a tradable intermediate good.
- Four price indices: producer-, export-, import-, and consumer-price index.
- To generate imperfect exchange rate pass-through, the model includes local currency pricing and distribution costs.

The VAR model

- The VAR model includes five first-differenced variables: ΔP_t^m , ΔP_t^x , ΔP_t^y , ΔP_t^c , and ΔS_t .
- Exchange rate shocks have contemporaneous effects on the prices.
- Uses an identification scheme suggested by Del Negro and Schorfheide (2004).

Comments on the paper

- The UIP is one of key equations of the SOE model, but it is well known to be empirically rejected, Fama (1984).
- In the model, interest rate differentials move one-for-one with the expected change. However, the opposite seems to happen in the data, where exchange rates are roughly random walks, so that the expected depreciation is roughly constant.
- UIP condition is derived from first-order conditions. What justify adding an ad hoc shock (UIP shock) to that condition?
- Since UIP condition is strongly rejected by the data, how can artificial data generated from a UIP shock would compare to the actual data?

Comments on the paper Con/t

- In SOE models, shocks to foreign interest rate are the main sources of exchange rate fluctuations. Why not modeling shocks to exchange rate as shocks to foreign interest rates instead of UIP shock?
- The model implies that relative prices are stationary but prices in level are not. Why not using relative prices in the VAR model rather than variables in first differences? Christiano et al. (2006) conclude that a VAR with first differenced data could be very misleading.
- In the identification of the VAR, exchange rate shocks have contemporaneous effects on prices, while markup shocks have an effects on exchange rate with a lag. However, in the DSGE model markup shocks have an immediate effects on the exchange rate.

Suggestions for future work

- It would be preferable to estimate structural parameters using the ML or Bayesian techniques and actual data of the series used in the estimation of the VAR model, as suggested by Fernandez-Villaverde et al. (2005). This to show that results in this paper could be generated.
- Comparing the impulse responses of some real variables. The VAR could also include some real variables.
- Ambler et al. (2003) show that exchange rate pass-through is incomplete in a standard New Keynesian model with wage rigidity. I suggest to include wages in the VAR model.