Discussion of

The Scapegoat Theory of Exchange Rates: The First Test

by Fratzscher, Sarno and Zinna

Martin D. D. Evans
Georgetown University, The IMF and NBER

Agenda

- Context: Sources of Exchange Rate Dynamics
  - Where does the Scapegoat Model Fit?
- What this paper does
- An assessment of the results

Context 1

Consider the class of model that can be written as

$$s_k = \lambda \mathrm{E}_t \Delta s_{t+1} + F_t$$

where fundaments may only be partially observed. This equation implies

$$\Delta s_{t+1} = \frac{1-b}{b} \sum_{i=1}^{\infty} b^i \mathrm{E}_t \Delta F_{t+i} + \frac{1-b}{b} \sum_{i=1}^{\infty} b^i (\mathrm{E}_{t+1} - \mathrm{E}_t) F_{t+i}$$

where $b = \lambda / (1+\lambda)$

So depreciation rates vary because :

- forecasts for the future growth in fundamentals drive changes in the expected depreciation rate, or
- new information induces a revision in forecasts of future fundamentals that produces an unexpected jump in the spot rate.

Context 2

(1) $$\Delta s_{t+1} = \frac{1-b}{b}\sum_{i=1}^{\infty} b^i \mathrm{E}_t \Delta F_{t+i} + \frac{1-b}{b}\sum_{i=1}^{\infty} b^i (\mathrm{E}_{t+1} - \mathrm{E}_t) F_{t+i}$$

Suppose $\Delta F_t = \Delta f_t' \beta_t$ and $\beta_t = \beta_{t-1} + v_t$. If agents know β_t then the observed time series on depreciation rates and (observed) fundamentals will be unstable. (This will be very hard to detect at monthly and quarterly frequencies)

The Scapegoat Model

Suppose agents don't know β_t. A change in an unobserved fundamental leads to an FX variation that agents (rationally) attribute to the effects of a larger value for an element in β_t. Consequently, the observed fundamental becomes a scapegoat.

Context 3

(1) $$\Delta s_{t+1} = \frac{1-b}{b}\sum_{i=1}^{\infty} b^i \mathrm{E}_t \Delta F_{t+i} + \frac{1-b}{b}\sum_{i=1}^{\infty} b^i (\mathrm{E}_{t+1} - \mathrm{E}_t) F_{t+i}$$

Observations on the Scapegoat Model

- If this effect is at work, it must operate via the second term on the RHS of (1)
- Testing the theory requires a lot of structure:
  - What do agents know, and when do they know it?
- What is the source and form of instability?
  - Is it the risk premium?
  - Is it central banks' reaction functions?
- Should the effects be obvious in the reaction of spot rates to macro news?

What the Paper Does

The main focus is on estimating

(2) $$\Delta s_t = \Delta f_t' \beta_t + (\Delta f_t' E_t \beta_t)\gamma + \delta x_t + u_t$$

where $$\beta_t = \beta_{t-1} + v_t$$

Does this follow from (1)? Possibly if Δf_t is i.i.d. and if order flows are unobserved and uncorrelated with Δf_t. (Neither assumption is very plausible.)

Estimation is by Bayesian methods using survey data from Consensus Economics to identify $E_t \beta_t$ (I think).

Results

1. Ranking of the most important macro factor in the Consensus Survey:
   - Participants are asked to rank the current importance of a range of different factors in determining exchange rate movements
   - Does this data tell us anything about scapegoats?

2. Estimates of (2) give significant estimates of γ and δ
   - The time varying parameters are not very variable.
   - Can we reject the null that they are constant? If so, what then?

3. Comparison of in-sample fit among: (i) constant parameter model, (ii) TV parameter model, (iii) scapegoat without order flow, and (iv) scapegoat with order flow.
   - In-sample fit goes up with (iii) and (iv). In some cases the fits are very high (perhaps too high)!

Comments

- Connection to theory is unclear/tenuous.
  - How does the regression equation come from (1)?
- The model is estimated at a monthly frequency using interpolated quarterly data. This destroys the temporal information structure.
- The paper is never clear on how the survey data are used to identify the $\Delta f_t' E_t \beta_t$ term.
  - This term is identified in the TVP model so it seems as though there are 2 estimates of the same term floating around. They should be the same!
- There is not enough information on the survey.
  - What is the timing of the survey relative to the measuring of the macro and exchange rate data?
  - Are we simply asking for ex post justifications?

Last Comment

An interesting paper but…..

I'm unclear about:

- the link between the theoretical model and the estimated equations,
- how the survey data are used, and
- what accounts for the high in-sample fits.