Discussion of

The Scapegoat Theory of Exchange Rates: The First Test

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Agenda

• Context: Sources of Exchange Rate Dynamics
  • Where does the Scapegoat Model Fit?

• What this paper does

• An assessment of the results
Consider the class of model that can be written as

\[ s_k = \lambda E_t \Delta s_{t+1} + F_t \]

where fundamentals may only be partially observed. This equation implies

\[ \Delta s_{t+1} = \frac{1-b}{b} \sum_{i=1}^{\infty} b^i E_t \Delta F_{t+i} + \frac{1-b}{b} \sum_{i=1}^{\infty} b^i (E_{t+1} - E_t) F_{t+i} \]

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.
Suppose \( \Delta F_t = \Delta f_t' \beta_t \) and \( \beta_t = \beta_{t-1} + v_t \). If agents know \( \beta_t \) 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 \( \beta_t \). 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 \( \beta_t \). Consequently, the observed fundamental becomes a scapegoat.
Context 3

\[ \Delta s_{t+1} = \frac{1-b}{b} \sum_{i=1}^{\infty} b^i E_t \Delta F_{t+i} + \frac{1-b}{b} \sum_{i=1}^{\infty} b^i (E_{t+1} - E_t) F_{t+i} \]

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

\[ \Delta s_t = \Delta f_t ' \beta_t + (\Delta f_t ' E_t \beta_t) \gamma + \delta x_t + u_t \]

where

\[ \beta_t = \beta_{t-1} + v_t \]

Does this follow from (1)? Possibly if \( \Delta f_t \) is i.i.d. and if order flows are unobserved and uncorrelated with \( \Delta f_t \). (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 $\gamma$ and $\delta$
   - 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 $\Delta f_i ' E_i \beta_i$ 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.