

Discussion of: “On the Unstable
Relationship between Exchange
Rates and Macroeconomic
Fundamentals” by B-vW

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Outline of the Paper

- The paper models the “unstable relationship between exchange rates and macro fundamentals.”
- The approach is to model parameters as time-varying, persistent random variables.
- The exchange rate is determined by fundamentals – some observed and some not observed by agents.
- Agents form expectations about current, future and past coefficients and unobserved fundamentals by a standard signal extraction problem.
- Related to BvW’s “Scapegoat” model.
 - But this paper assumes no private information.
 - This paper derives some general results.

Main results

- BvW examine the implications (by solving the model numerically) for: $\partial \Delta s_t / \partial \Delta f_{nt}$
- A key finding is that shocks to unobserved fundamentals have a bigger effect on this derivative than shocks to the parameter.
 - This is the “scapegoat” effect. Agents confuse the effects of changes in unobserved fundamentals with changes in parameters.
 - Indeed, changes in parameters themselves have a very small effect on the high frequency movement in this derivative.
- These results are derived approximately analytically and confirmed in numerical analysis.

What is What? (1)

- When BvW talk about parameter instability, are they referring to deep structural parameters or reduced form parameters?
- In the model, there is uncertainty about the structural parameters. (However these parameters may not be very “deep”. That is, the model might be a reduced form.)
- But the numerical analysis seems to be about reduced form parameters: $\partial \Delta s_t / \partial \Delta f_{nt}$
- Reduced form parameters will be unstable even when structural parameters are stable if the stochastic processes for the fundamentals is changing. (Lucas critique, 1973; Cowles Foundation, 1950.)

What is What? (2)

- What makes something a parameter versus an unobserved fundamental (noise) in this model?
- Is it because “parameters” multiply observed fundamentals, but unobserved fundamentals enter additively?
- Or is the key that “parameters” are the unobserved things that are very persistent, while noise is less persistent?
- That is, what would happen to the behavior of $\partial \Delta s_t / \partial \Delta f_{nt}$ if noise was persistent and parameters were not? How do we know what is true?

Alternatively...

- The previous slide suggested that BvW develop a more general definition of what is meant by parameter uncertainty.
 - In contrast to the approach of the paper, which is to develop a “general” model and refer to some variables as parameters and some as unobserved fundamentals.
- But a different approach would be to identify exactly which parameters are time-varying (and which agents have uncertainty about.)
 - Then provide empirical evidence to support the claim.

Disconnect vs. Scapegoat

- The paper does not try to explain “disconnect”.
- I think disconnect refers to the observation that changes in exchange rates seem to be uncorrelated with contemporaneous changes in fundamentals.
- In a sense, scapegoating denies that disconnect exists. Scapegoating says there is a relationship between fundamentals and exchange rates, but the relationship varies over time for each fundamental.
- It would be nice to derive a rigorous test for scapegoating vs. disconnect. (Perhaps Sarno and Valente (2009) is such a test.)

A Model of Disconnect

- A model of disconnect is easy. Indeed, disconnect doesn't even deserve a name.
- If exchange rates, like other asset prices, are determined as a discounted sum of current and future fundamentals, then the current fundamental does not get much weight.
- That is, the asset price is driven by news about future fundamentals.
 - Or, the AP guys would say, changes in risk tolerance.
- Either way, there is little link between current fundamentals and the asset price. (Should stock prices move when the current dividend changes?)

Or, a Model of Scapegoating...

- As Sarno and Valente (2009) note, a similar argument can be made to develop a model of scapegoating.
- That is, the correlation of changes in current fundamentals with future fundamentals may change over time.
 - So the news content of various current fundamentals may vary over time.
 - This leads to time-varying reduced form relation between exchange rates and current fundamentals.
- This scapegoating story does not require any time variation in structural parameters.

Predicting Exchange Rates

- BvW then turn to the question of whether parameter uncertainty can explain the inability of models to forecast exchange rates.
- They refer to the Meese-Rogoff test – which I call out-of-sample fit rather than forecasting.
- The theorem and examples in Engel-West (2005) show that most forward-looking models of exchange rates imply that the models actually imply there should be little genuine out-of-sample forecasting power.

BvW's Interpretation of Meese-Rogoff

- BvW describe the Meese-Rogoff test as seeing whether Δx (the change in the observed “fundamentals”) helps explain Δs .
- According to BvW, M-R find Δx does not help explain Δs .
- But in the simulated models of BvW, even with parameter uncertainty, Δs should be correlated with Δx .
- BvW conclude parameter uncertainty cannot explain the Meese-Rogoff puzzle.
 - They attribute the puzzle to the importance of unobserved fundamentals (misspecified models.)

Misinterpreting Meese-Rogoff

- But this is not what Meese-Rogoff do.
- BvW interpret M-R as saying that if you write an equation down like $s = s_{-1} + b\Delta x$, you find that the Δx does not add anything to out-of-sample fit.
- But actually, M-R ask whether $s = bx$ fits better than $s = s_{-1}$.
- Indeed, several papers indicate that the models do pass the first test – Δx does help explain Δs .

Less to Meese-Rogoff than Meets the Eye

- Note that Meese-Rogoff include the expectations variable $E(t)s(t+1)-s(t) = i(t)-i^*(t) = f(t)-s(t)$ as an ex post explanatory variable.
- BvW do not, which points to another difference in the exercises.
- But Engel-Mark-West (2008) argue the whole Meese-Rogoff exercises is arbitrary.
- To see this simply, consider this: If $f(t)-s(t)$ is used to account for out-of-sample fit, the models do badly in the Meese-Rogoff exercise.
- But rewriting the model so that $f(t)$ is the explanatory variable for $s(t)$, the models fit great. They blow the random walk out of the water.

Conclusions

- I believe what the article has to say. It is intuitive and seems right.
- But the next step is to be more precise:
 - Be more precise about definition of “parameter uncertainty”, and what is needed to account for scapegoating.
 - Or get more specific.
- It would be useful to develop empirical evidence:
 - Scapegoating vs. disconnect
 - If there is scapegoating, is it time-variation in structural parameters or shifts in DGPs of fundamentals?

Extremely Useful Contributions

- The research agenda of Bachetta and van Wincoop has provided valuable insights into how plausible deviations from rational expectations can affect exchange rates:
 - Private information
 - Costly processing of information
 - Parameter uncertainty