The Rise and Fall of the Natural Interest Rate

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When either Phillips curve or IS curve are flat, LW estimate of $r^*$ becomes imprecise.

This source of uncertainty accounts for the huge SE bands around those estimates.

An alternative way of estimating $r^*$ is a univariate local-level model:

$$ r_t - r_t^* = \alpha_r (r_{t-1} - r_{t-1}^*) + \varepsilon_t^r $$

$$ r_t^* = r_{t-1}^* + \varepsilon_t^r $$

This specification only relies on the assumption that the observed real interest rate reverts to the unobserved $r^*$ in the long run.

This model provides more precise estimates of $r^*$ than the LW filter.
Clarify the main contribution

Simulated data exercises

Exploring your definition of $r^*$

Panel ECM exercise
Contribution of the Paper

- Dense literature on quantifying the decline in $r^*$ and estimating contribution of various factors
- You should avoid being seen as yet another paper in that literature
- Your main contribution is a novel methodology for estimating $r^*$
- Your model is simple and transparent, and so easier to interpret
- The problem of wide error bands plagues most (all?) $r^*$ estimation methods, not just LW
- So you are bringing something important to the table
- Make this clear(er) from the very start - title and abstract!
- Though important to note that your estimates still have a 90% CI of roughly $-1\%$ to $3\%$ - economically still a large error band
Simulated Data Exercises

- Your analysis begs the question: If the LW filter is not observable, is it right to dig into its properties using post-estimation diagnostics?
- For example, it’s not clear that the point estimates of $\gamma$ and $\kappa$ are reliable if their true values are close to zero.
- Seems natural to estimate the LW filter using simulated data with different DGPs.
- For example, you could answer these questions:
  - How low is too low for the model to be observable?
  - How low is too low for the estimates to be sufficiently precise?
  - Is the local level model better at estimating the level of $r^*$, or just more precise?
  - Are the models equivalent when $\gamma$ and $\kappa$ are not zero?
  - Is the local level model more robust to misspecification (as claimed)?
  - How bad are the local level estimates if the true interest rate gap isn’t stationary?
(Re-)Defining r*

- Your model pins down r* by defining it as the long run level of the observed real interest rate.
- The paper slightly glosses over the fact that this is a new definition relative to LW, not just an alternative model for the same concept.
- Of course in simple NK models, output gap closed and inflation at target will be consistent with all variables at their long run values.
- But real interest rate at its long run value won’t necessarily imply output gap closed and inflation at target.
- For example, what about trade-offs between closing the output gap and stabilising inflation?
- You could be more transparent about this in the paper.
- Perhaps the natural benchmark is not the LW model, but a simple low-pass filter.
The panel ECM exercise should really be part of a separate paper

The cross-country estimation of $r^*$ is already an application of your methodology and a good (citable) contribution

The ECM doesn’t even use those same estimates of $r^*$

Comments on this section:
- The ‘young share’ is not just the baby-boom, but also driven by rising longevity (distinction is important as one is transitory the other is permanent)
- While risk is an important factor to include, using the term spread is a poor choice
- Not surprising that your demographic variable is the most important contributor, as it’s the only one that follows the pattern of real ex-ante rates